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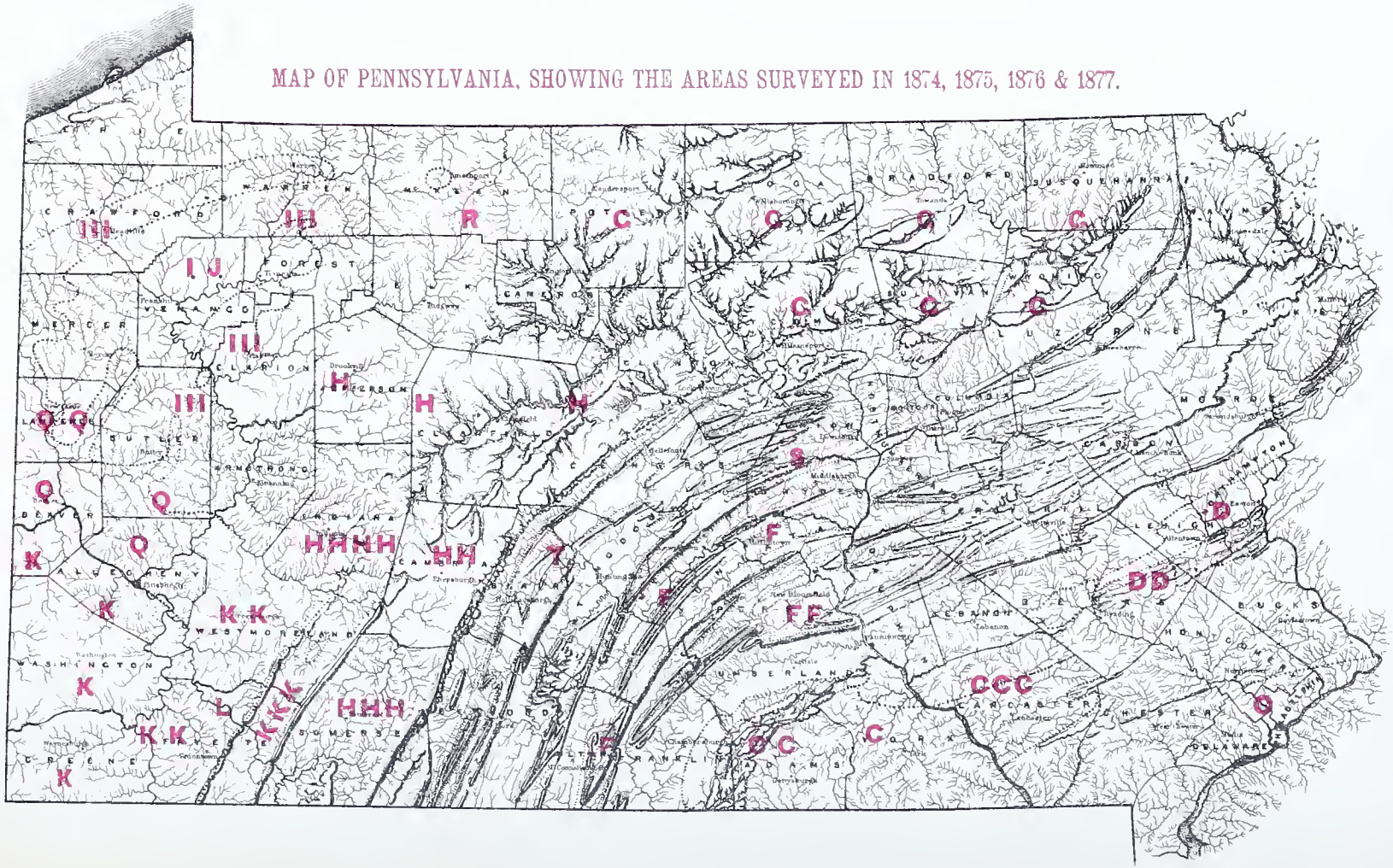
DOCUMENTS SECTION

MAP OF PENNSYLVANIA, SHOWING THE AREAS SURVEYED IN 1874, 1875, 1876 & 1877.



SECOND GEOLOGICAL SURVEY OF PENNSYLVANIA:
1874–'5–'6–'7.

CATALOGUE

OF THE

GEOLOGICAL MUSEUM.

BY

CHARLES E. HALL.

PART I.

COLLECTIONS OF ROCK SPECIMENS.

Nos. 1 to 4264.

HARRISBURG:
PUBLISHED BY THE BOARD OF COMMISSIONERS
FOR THE SECOND GEOLOGICAL SURVEY.
1878.

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1878.

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CHARLES ALLEN—In charge of the Collection of Records of Railroad and other Levels, Harrisburg.

F. W. FORMAN—Clerk in charge of the Distribution of Reports from the rooms of the Board, 223 Market street, Harrisburg.

TABLE.

Showing the order in which the collections are arranged in the Catalogue.

Museum Numbers.	Collectors.
1– 367,	. Prof. Persifor Frazer, Jr., 1874.
370–1,364,	. Prof. Persifor Frazer, Jr., 1875.
1,365–1,529,	. Mr. Franklin Platt, 1874.
1,530–2,199,	. Mr. John H. Dewees, 1874.
2,200–2,247,	. Mr. Andrew Sherwood, 1875.
2,248–2,572,	. Mr. Chas. A. Ashburner, 1875.
2,573–2,778,	. Tyrone Section, (Mr. W. A. Fellows,) 1876.
2,779–3,420,	. Mr. John F. Carll, 1874 and 1875.
3,421–3,669,	. Miscellaneous Lithological Collections.
3,670–3,945,	. Mr. Persifor Frazer, Jr., 1876.
3,946–4,143,	. Mr. Persifor Frazer, Jr., 1877.
4,144–4,264,	. Mr. A. E. Lehman, 1877.

The field numbers, or those given to the specimens by the collectors, are indicated in the catalogue in *brackets* alongside of the museum numbers.

University of Pennsylvania, West Philadelphia,
May 1, 1878.

Professor J. P. Lesley,

State Geologist:

Sir: The following catalogue of the lithological collections of the Second Geological Survey I have the honor to submit.

This catalogue includes all the collections made by the field parties since the beginning of the survey in 1874, up to the fall of 1877, excluding those specimens retained for study or analysis, and also those collected under my direction in the eastern portion of the State in 1877.

During the summer of 1877, I was assisted by Mr. W. A. Fellows.

I have the honor to be,

Your most obedient servant,

Charles. E. Hall.

CATALOGUE.

1 to 367—P. FRAZER—1874.

York and Adams Counties.

1, Foliated schist; ripidolite, somewhere in Peach Bottom township.
2, Hydro-mica schist. ¼ mile south of New Freedom.
3, Gneissoid; mica slate. 200 rods from bridge on railroad; ⅓ mile south of New Freedom.
4, "Silicon steel ore," compact chlorite slate, containing magnetite and pyrite. Bank I. Ore like that of Help's, fully magnetic. Young's farm, south of Shrewsbury.
5, Hard dark limonite. Bank II. Reilston's bank, 4 miles south-west of New Freedom.
6, Compact gneissoid mica slate. 200 yards east of Shrewsbury station.
7, Ferruginous gneissoid mica schist, containing magnetic grains. Northern Central railway. ½ mile north of Shrewsbury station.
8, Gneissoid hydro-mica slate. Shrewsbury station.
9, Ferruginous gneissoid mica slate. Help's brewery.
10, Ferruginous chlorite slate. Bank III. Help's mine.
11, "Silicon steel ore," chloritic-slate, containing magnetite, pyrite, and disseminated calcium carbonate. Magnetic. Help's bank. 1 mile north of Shrewsbury station. Northern Central railway.
12, Limonite. Bank IV. Lamott's opening near the Maryland line.
13, Limonite with göthite. Bank V. Keeny's ore bank. Leased by the Lebanon company.

14, Limonite. Bank VI. Cameron opening, just over York county line, in Maryland.
15, Limonite. Cameron & Co.'s opening.
16, Chlorite slate. Cameron's opening.
17, Ferruginous chlorite slate. Cameron & Co's opening.
18, Fine grained chlorite slate. Contains decided traces of limestone and free quartz. Station 2,600 P. B. R. R., at Kneedler's mills.
19, Quartz. Slate. Station 2,600 at Kreidler's mills. P. B. R. R.
20, Fine grained argillitic hydro-mica slate. Station 2,602 P. B. R. R., Wagner's mill.
21, Argillaceous mica slate. Station 2,604, P. B. R. R., about half way between Wagner and Stiles' mills.
22, Mica slate, with cavities of iron oxide. Station 2,605 P. B. R. R., between Wagner and Stiles' mills.
23, Ferruginous mica slate. Station 2,607 P. B. R. R., picnic grounds.
24, Clay slate. Station 2,608, P. B. R. R., cut at picnic grounds.
25, Hydro-mica slate, with impressions of pyrite filled with iron oxide. Station 2,610, near Neff's mill, P. B. R. R.
26, Highly ferruginous mica slate. Station 2,612, P. B. R. R., Small's cut near Red Lion summit.
27, Ferruginous mica slate. Station 2,612 P. B. R. R., in Small's cut near Red Lion summit.
28, Highly ferruginous mica slate. Station 2,613, P. B. R. R., summit cut Red Lion.
29, Ferruginous mica slate. Station 2,613 P. B. R. R., summit cut Red Lion.
30, Mica slate. Station 2,613, P. B. R. R., summit cut Red Lion.
31, Mica slate. Station 2,613, P. B. R. R., summit cut Red Lion.
32, Chlorite slate. Station 2,614, P. B. R. R., near Red Lion summit.

NOTE.—The Roman figures refer to Ore Bank numbers on Map in Report C of the Geological Survey.

33, Hydro-mica slate. Station 2,623, P. B. R. R., near Seitz's mills.

34, Hydro-mica slate. Station 2,630, P. B. R. R., below Kaufman's mill, rocky-hill side.

35, Chloritic mica slate. Station 2,634, P. B. R. R., one-half mile below Stabley's mills.

36, Sandy slate. Northern Central railway, 1 mile south of Seitzland.

37, Compact chlorite slate. Glen Rock railroad cutting, marked "B," on page 67, note book No. 5.

38, Chlorite slate with quartz vein. Glen Rock railroad cutting, marked "A," on page 67, note book No. 5.

39, Impure limonite. Bank XX. Strongly magnetic. Reuben Burg's ore shaft, $\frac{1}{4}$ mile east of Prospect.

40, Slate highly impregnated with limonite. Bank XXII. Margaretta furnace, from opening 300 yards, west of furnace.

41, Slate impregnated with iron. Margaretta furnace, from bank nearest stack.

42, Mica slate, impregnated with iron. Margaretta furnace.

43, Concretionary limonite with red hematite. Margaretta furnace, opening nearest stack.

44, Slaty limonite. Opening northwest of Margaretta furnace.

45, Impure limonite. Margaretta furnace shaft, near stable yard of Mansion house.

46, Limonite. Bank VIII. J. Keller's, (Case & Co.'s mine), 1 mile east of Margaretta furnace.

47, Argillaceous mica slate, pitted with cavities filled with oxide of iron. B. Raub's farm, north end of Dallastown.

48, Pseudomorphs of hematite, after pyrite imbedded in slate. Crystals, $\frac{3}{4}$ inch on a side. B. Raub's farm, north end of Dallastown.

49, Limonite. Bank X—called variously old P. Williams or Gladfelter. Old abandoned mine 2 miles east of Logansville. (Old P. Williams' bank.)

50, Limonite. Bank XI. Brilhart's mine, 1 mile east of Logansville.

51, Limestone, with pinkish crystalline, do. Between Feigley and Brilhart's pit, Dunkard valley, 1 mile east of Logansville.

52, Slaty limestone. Contains about 80 per cent. carbonate of lime. Between Feigley's and Brilhart's bank, 1½ miles east of Logansville. Dip almost vertical. Reported limestone quarry.

53, Honey-combed limonite. Bank XII. Feigley's mine, Dunkard valley, 1 mile east of Logansville.

54, Limonite. Feigley's bank, Dunkard valley, 1 mile east of Logansville.

55, Clay limonite. Feigley's, 1 mile east of Logansville.

56, Limonite. Bank XIII, strongly magnetic. Hoffacker's old opening.

57, Limonite. Strongly magnetic. Hoffacker's bank, 6 miles east of Hanover, leased to Wrightsville company.

58, Chlorite and quartz conglomerate with slates and pyrite. Hoffacker's farm. Old opening.

59, Pyrites on chlorite slate. Hoffacker's farm. Old opening 6 miles south-east of Hanover.

60, Limonite, Chlorite slate and pyrite. Hoffacker's bank, 6 miles south-east of Hanover.

61, Mica slate from mine. Hoffacker's farm, Wrightsville Company's lease.

62, Chlorite slate. Hoffacker's old opening.

63, Ferruginous slate, carrying pyrite. Hoffacker's farm, old opening below house.

64, Chlorite slate. Bank XIV, Benade's shaft. 5 miles south-east of Hanover, north of Baltimore pike.

65, Limonite. Eli Bomgardner's farm, 5½ miles south-east of Hanover.

66, Concretionary limonite. Bank XV. D. Leber's shaft, 4 miles south-east of Wrightsville.

66a Calcareous slate, with pyrite accompanying limestone. D. Leber's quarry, near Cabin Branch run.

67, Ferruginous clay. Bank XVII. J. Emig's bank, Kneisley's farm.

68, Quartzite, with magnetite and some mica. Bank XIX, strongly magnetic. G. Keller's, 1 mile from Prospect, 3½ miles from Wrightsville.
69, Chlorite slate. Strongly magnetic. Geo. Keller's.
70, Very fine grained chlorite slate. Geo. Keller's.
71, Impure, slaty, greenish limestone. Geo. Keller's.
72, Compact chlorite; fine grained and diffused in aquitite with quartzite. Strongly magnetic. Geo. Keller's.
73, Limonite. Bank XXI. Small's bank, half a mile north of Margaretta furnace.
74, Brown and red hematite. Bank XXIV, Barcroft. Butcher's bank, 6½ miles east of York.
75, Shelly limonite, with Göthite and black glossy (Manganiferous?) ore. Butcher's bank, 6½miles east of York.
76, Impure limonite, (Manganiferous?) Bank XXV, Barley(?) Barley's ore bank, 2½ miles south of Campbell's station.
77, Limonite. Bank XXVI. Hengst's ore bank, 2½ miles south of Campbell's station, York and Wrightsville railroad.
78, Impure limonite. Bank XXVII. G. Moser's new opening, ¼ mile east by north of Ensminger's, 5½ miles from York.
79, Limonite with clay. Bank XXVIII. New opening, Ensminger's farm, 5 miles south-east of York.
80, Limonite. Bank XXVIII. Old opening, Ensminger's farm, 5 miles south-east of York.
81, Limonite, with yellow ochre and black glossy ore. Bank XXIX. Moser's bank, near Wineka & Wright's, 5 miles from York.
82, Shelly göthite, with ochre. Bank XXX. Old Moser bank, 5 miles south-east of York, specimen from scales.
83, Shelly göthite, with black glossy surface. Old Moser bank, 5 miles south-east of York, specimen from scales.
84, Impure limonite. Old Moser bank, near Wineka & Wright's, 5 miles south-east of York.

85, Ferruginous conglomerate. Found at old Moser's bank, 5 miles south-east of York.

86, Ferruginous conglomerate. Bank XXXI. G. Leader's farm, $\frac{1}{3}$ mile east of intersection of Baltimore pike with East Codorus.

87, Sandy chlorite slate. Magnetic. Geo. Leader's farm, $\frac{1}{3}$ mile from intersection of Baltimore pike and East Codorus.

88, Chlorite slate. Magnetic. Leader's hill, second opening, between stations 160 and 161.

89, Pyrite hydro-mica slate. Leader's hill, station 160.

90, Chlorite slate, with impressions of pyrite. Seventy-five feet south-east from John Ilye's farm, station 156.

91, Impure limonite. Bank XXXII. S. Hess' farm, 1 mile west of Baltimore pike, $1\frac{1}{2}$ miles south of New Paradise.

92, Hydro-mica slate. S. Hess' farm, $1\frac{1}{2}$ miles south-west of Paradise.

93, Limonite. Bank XXXIII. Logansville road, Falkenstein's field, $\frac{3}{4}$ mile east of Gladfelter's station.

94, Mica slate, impregnated with iron. Bank XXXVII. Geisselman's farm, 1 mile below Gladfelter's station, second shaft from road.

95, Chlorite. Sthambach's farm, on road running west from Gladfelter's station.

96, Hydro-mica slate. West of Seven Valley mill, on road to Gladfelter's station.

97, Argillaceous limonite. Bank XXXVI. Gladfelter's mine, near Smyser's station, Northern Central railway.

98, Chlorite slate. Gladfelter's farm, on road running west from Gladfelter's station.

99, Limonite. Bank XXXVIII. Smyser's station, Thomas Iron Company's shaft.

100, Slaty limestone, with imbedded crystals of pyrite. Like that from Feigley's bank. John E. Zigler's slate quarry, $\frac{3}{4}$ mile south-west of Hanover Junction.

101, Dendritic stain on argillite. J. Zigler's limestone quarry, near Hanover Junction, H. B. R. R.

102, Argillite; roofing slate. Zigler's slate quarry, ¾ mile south west of Hanover Junction, opening No. 1.

103, Slate, impregnated with iron. Walter's bank, near Hanover Junction.

104, Limonite. Bank XL, David Crout. Musselman and Watt's bank.

105, Arenaceous mica-slate carrying magnetite. Bank XLI, magnetic. Beeler's opening in orchard, on range with Knotwell.

106, Sandy, compact chlorite slate. North-west ¼ mile from J. Beeler's, near Stackhouser's station.

107, Ferruginous chlorite slate. Bank XLVI (?) Thomas Iron Company, just west of Strickhouser's station, Cold Spring bank.

108, Limonite; segregated in slate. Cold Spring bank.

109, Argillaceous hydro-mica slate. Bank XLVI. Cold Spring bank, ½ mile from Cold Spring station, H. B. R. R.

110, Chlorite slate, carrying pyrite and specular iron. Bank XLII. Knotwell's shaft, 1¾ miles from Hanover Junction.

111, Chlorite slate, carrying pyrite and specular iron. Strongly magnetic. Strickhouser's farm, leased to Knotwell.

112, Hydro-mica slate, impregnated with iron oxide. "Codorous ore," magnetic. Strickhouser's farm, leased to Knotwell.

113, Mica slate, carrying magnetite and pyrite. Bank XLIV, "Codorus ore." Feebly magnetic. New opening on Strickhouser's farm.

114, Mica slate, carrying magnetite and pyrite. York Iron Co.'s bank, on the hill above W. cut.

115, Limonite. Brodbech's, 1½ mile from Jefferson.

116, Clay slate. Flickinger's ore shaft, ½ mile south-west of Jefferson, Jefferson and Hanover road.

117, Limonite. Bank LII. Shueman's ore shalf, ¾ mile south-west of Jefferson.

118, Compact chlorite slate, carrying magnetite. Bank LIV, strongly magnetic. Nes Hill, ¾ mile south-west of Krauft's mill, near Bachman's Junction.

119, Ferruginous argillite. Station 2,488, P. B. R. R., near Small's mill.

120, Chloritic argillite. Station 2,489, P. B. R. R., near Small's mill.

121, Sandy mica slate. Station 2,490, P. B. R. R., near Small's mill.

122, Laminated quartz. Station 2,491, P. B. R. R., across creek from Small's mill.

123, Quartz, in slate. Station 2,492, P. B. R. R., at Small's mill dam.

124, Fine grained chlorite slate. Station 2,497, P. B. R. R., near Small's mill dam.

125, Chloritic argillite. Station 2,497, P. B. R. R., at road crossing above paper mill dam.

126, Argillite. Station 2,495, P. B. R. R., near Small's mill dam.

127, Calcareous mica schist. Station 2,536, P. B. R. R., 19 miles from York.

128, Striped limestone. 128*a*, calcareous slate. Kerr, Cook & Co.'s limestone quarry, ½ mile north-west of Wrightsville.

129, White limestone. 129*a*, hydro-mica slate. Detweiler & Co.'s limestone quarry, Wrightsville.

130, Quartzite. 130*a*, hydro-mica slate. On York and Wrightsville pike, 1 mile west of Wrightsville.

131, Quartzite. 131*a*, sandy mica slate. Bluff on Susquehanna river opposite Marietta.

132, Kaolinized mica slate. Glatz's ferry road, one half mile from ferry.

133, Chlorite slate; fine grained. River shore at Glatz's ferry, opposite Marietta.

134, Quartz, conglomerate. Chimney rocks, 4 miles north-west of Wrightsville.

135, Quartzite, conglomerate. Glatz's ferry road, ½ mile from D. Rudy's, nine miles from York.

136, Compact limonite. Gohn's bank, 2 miles west of Wrightsville, one mile west of Y. & W. R. R.

137, Concretion of limonite, red hematite and ochre. Bank LXVII. Bahn's bank, 1½miles from Glatz's ferry, and ten miles from York.

138, Quartzite. Gohn's (?) Near Rudy's ore bank, 3 miles west of Wrightsville, and ¾ mile north of Y. & W. R. R.

139, Limonite. Bank LXX. Rudy's ore shaft, 4 miles west of Wrightsville, ¾ mile north of Y. & W. R. R.

140, Quartzite. Bank LXXI. Ruby's bank, 7½ miles north-east of York.

141, Limonite. Bank LXXI. Ruby's, next to Rudy's, 8 miles north-east of York.

142, Ferruginous sandy slate. Strongly magnetic. Grubb's bank, 6 miles north-west of Wrightsville.

143, Decomposed sandy slate. Bank CX, strongly magnetic. Grubb's bank, 6 miles north-west of Wrightsville.

144, Limonite. Bank LXXII. Keller's bank, 5 miles west of Wrightsville, 1 mile north of railroad.

145, Clay and limonite. Bank LXXV. Norse's bank, 6 miles north-east of York, and 2 miles north of railroad.

146, Limonite. Bank LXXIII. Hiestand's bank, 5½ miles from York.

147, Sandy hematite, with micaceous ore. Bank LXXIV, magnetic. Blessinger's bank, 5 miles north-east of York.

148, Limonite. Bank LXXVII. L. Deitz's bank, 4 miles north-east of York.

149, Limonite. Bank LXXVIII. Deitz's bank, 4 miles north-east of York, and ¼ mile from railroad.

150, Quartzite, conglomerate. Mount Zion church on top of ridge, 5 miles north-east of York.

151, Spathic ore. Smyser's farm, Ashland Co.'s lease, 4 miles north of York.

152, Chert. Smyser's bank, Small's lease, 4 miles north north-east of York.

153, Limonite. Bank CXII. Smyser's bank, Small's lease, 4 miles north north-east of York.

154, Ferruginous sandy slate, with Göthite. Smyser's, 4 miles north-east of York.

155, Impure spathic ore. S. Smyser's farm, Ashland Co.'s lease, 4 miles north of York.

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156, Limestone. Bank CXI. Smyser's farm, Ashland Co.'s lease, 4 miles north of York.

157, Limonite. Bank LXXIX. Fritz's bank, 4 miles north-east of York.

158, Limonite. Bank LXXX. Heidelbaugh's opening, 3 miles east of north of York.

159, Slate, impregnated with iron. Bank LXXXI. Corr's bank, 2 miles north of York, on Vinegar ferry road.

160, Sandstone and slate. Corr's mine, 2 miles north of York.

161, Limonite. Bank LXXXI, magnetic. Ebert's mine, 2 miles north of York, on Vinegar ferry road.

162, Limonite. Bank LXXXI, strongly magnetic. Ebert's ore bank, Benson & Cottrell's lease.

163, Brown and red hematite, with micaceous iron ore. On property at station 633, Diehl's.

164, Hydro-mica slate. P. B. R. R., 1† miles from York.

165, Slate, impregnated with iron. Bank CXVI. Louck's bank, Cottrell & Benson's lease, off Wrightsville pike.

166, Slate, impregnated with iron. D. Louck's bank, 1 mile north of York, Opossumtown road.

167, Ferruginous sandy slate. Louck's farm, (near Hake's) 1½ miles north of York, Benson & Cottrell's lease.

168, Indurated clay. Louck's farm, (near Hake's,) Benson & Cottrell's lease.

169, Clay. Louck's farm, Benson & Cottrell's lease.

170, Argillaceous mica slate. Louck's farm, Benson & Cottrell's lease.

171, Red hematitle. Bank CXVI. Louck's farm, 3 miles north of York.

172, Red sandstone ; (mesozoic.) Fork of Liverpool and Lewisberry roads.

173, Limestone. Fork of Old Liverpool and Lewisberry roads. (744*a*, V. 40.)

174, Dark blue black limestone. Station 627, 2 miles north of York.

175, Limestone from mouth of spring. George Ruth's.

176, Hematite. Bank CXIII. Hake's farm ; Schall's lease.

177, Magnetic. Bank CXV, strongly magnetic. Lightner's farm, one and a half miles north of York, on Harrisburg pike.
178, Conglomerate red limestone. (Potomac marble?) Emigsville.
179, Pink sandstone. Emigsville, from railroad cut.
180, Blue laminated limestone. Emigsville.
181, Buff and white laminated limestone, flaggy bedded. ½ mile south-west of Emigsville.
182, Micaceous, red sandstone. 5½ miles west of York, near Emig's mills.
183, Felspathic conglomerate. 5 miles west of York, 1 mile north of Gettysburg pike.
184, Honey-combed magnetite ore. Strongly magnetic. Harman's farm, between Carlisle and Emig's mill roads.
185, Coarse New Red sandstone. 384 feet above G. Beeler's road on Carlisle road.
186, Trias conglomerate, with slate pebbles. Beeler's cross road on Carlisle road, 2 miles from York.
187, Coarse Mesozoic conglomerate. (Potomac marble?) 300 feet above Beeler's road on Carlisle road.
188, Blue limestone streaked with white. (Trias comes in here.) Intersection of Carlisle and Beeler's roads.
189, White limestone. Lime opening in field 400 feet from Carlisle road.
190, Dark blue limestone. Station 178*j*.
191, Dolerite. Beeler's farm.
192, Crystalline limestone, with pink tint, (in contact with the last). Station 178*h*.
193, Fine grained New Red sandstone. Carlisle and Beeler's roads.
194, Clay sandstone. Magnetic. Carlisle road near Harman and Beeler's, found in road.
195, Honey-combed magnetic ore. Lewis Nyman, on A. Haman's property, north fork of Carlisle road.
196, Limonite and red hematite. Bank LXXXIII. Harman's farm in fork of road, from filled up shaft.
197, Red hematite. J. Eisenbach, on Emig's mill road.

198, Dolomite. Road from Emig's mill road to Gettysburg pike.

199, Arenaceous mica slate, intersected by quartz. Shunk's hill near summit, 2 miles from York.

200, Quartz. Shunk's hill 200 feet from summit, 3 miles from York.

201, Crystal of pyrite, coated with limonite. Road from Shunk's hill to Baltimore pike, 2 miles from York.

202, Quartzite, with imbedded crystals of pyrite altered on exterior to limonite. $\frac{1}{4}$ mile west of Baltimore pike, on road to Shunk's hill, 2 miles from York.

203, Quartzite. 100 yards from Baltimore pike, 2 miles south of York.

204, Pink quartzite. Station 30.

205, Milk quartz, with imbedded crystals. In road from Shunk's hill to Baltimore pike, 2 miles from York.

206, Milk quartz. $\frac{1}{4}$ mile west on Baltimore pike, 2miles from York.

207, Sandy slate. A cross road 200 yards from Baltimore pike, 2 miles south of York.

208, Arenaceous chlorite slate. 2 miles north-east of Brilhart's station, N. C. R. W.

209, Argillites. Banks of Codorus, 1 mile north of York.

210, Dark blue limestone. Bank of Codorus, 1 mile north of York.

211, Galena. Frystown, east of York, Christian Miller's property, found in digging a well.

212, Galena. Frystown.

213, Fine laminated slaty limestone. P. B. R. R., $1\frac{1}{2}$ miles from York.

214, Blue limestone, carrying white calcite. P. B. R. R., miles east of York; D. & H. Shellenberger's quarry.

215, Dark blue limestone. P. B. R. R., 2 miles east of York.

216, Chlorite slate, with limestone. P. B. R. R., just south of Plank road.

217, Shaly clay slate. Bank LXXXV, Eyester's. Smyser's bank, near toll gate, Gettysburg pike.

218, Ferruginous slate. Magnetic. Smyser's bank, near toll gate, Gettysburg pike.
219, Argillaceous ore. (Kaufman.) Smyser's bank, near toll gate, Gettysburg pike.
220, Argillite slate. Smyser's bank.
221, Corrugated red and brown mottled limestone. Smyser's bank, 2¾ miles west of York, on the Gettysburg pike.
222, Slate, with disseminated magnetite. Bank LXXXIV, specimen from "a". Kaufman's bank.
223, Ferruginous slate. Kaufman's bank near station 77.
224, Calcite. (Sketch in note book No. 2.) Sprenkle's limestone quarry, Hanover road near Wolf's tavern.
225, Highly crystalline limestone. Quarry on Hanover road near Wolf's tavern, 5 miles west of York.
226, Red hematite wash ore. In field north of Wolf's tavern, 5 miles west of York.
227, Impure slaty limonite. Opening south of school house on Hanover road; S. Emig.
228, Ferruginous argillites. Bank LXXXVI. Opening in field south of school house, Hanover road; S. Emig.
229, Decomposed ferruginous slate. Bank XCI. J. Roth, Jr., 1½ miles north-west. from Menges'
230, Argillite. M. Myers, ¾ of a mile west of Menges.
231, Limonite. Bank LXXXIX. M. Myers' farm; new opening ¾ of a mile west of Menges'.
232, Clay and limonite. Bank XCIV. Bollinger's.
233, Ferruginous clay. Bollinger's, Hanover road.
234, Brown and red earthy hematite. Bollinger's.
235, Clay and limonite, wash ore from pit. Bollinger's; Kauffman's working.
236, Limonite. Bank LXXXVIII. Menges' bank, 1½ miles from Spring forge, Hanover road.
237, Ferruginous slate. Jacob Myers' field ¼ mile north-east from Myers' mill.
238, Limonite, with stalactites of the same ore, and Göthite. Bank XCVI. Boyer's bank, flank of Pigeon hills.
239, Quartzite. Abrupt hill by Myers' mill.
240, Quartzose sandstone. Foot of Pigeon hills.
241, Quartzite. Pigeon hill.

242, Limonite. Bank XCV, magnetic. G. Forrey's field, near Boyer's bank.
243, Argillaceous hematite. Bank XCVIII. Moul's bank, foot of Pigeon hills.
244, Milk quartz. Foot of Pigeon hills. Porter's mine.
245, Impure red and brown hematite. Bank XCVIII. Moul's bank, foot of Pigeon hills.
246, Indurated clay, impregnated with iron oxide. Moul's bank, foot of Pigeon hills.
247, Compact limonite. Jesse Moul's bank, leased to Kauffman of Reading.
248, Sandy limonite. Bank C. Philip Moul's field.
249, Red oxide. Bank XCVIII. Jesse Moul's bank of iron.
250, Limonite, with black glossy ore. Bank XCIII. Geo. Bechtel's bank.
251, Limonite. Bank CII. Hanover mine, Haldeman's ore, Pigeon hill range.
252, Red hematite. Bank CII. Between Haldeman's and Kaufman's.
253, Limonite. Bank CVI. Miller's farm, Ashland bank.
254, Limonite. Bank CVI. Miller's farm, Ashland bank.
255, Honey-combed limonite. Bank CVII. Moul's farm, Ashland bank, opened by Gov. Porter.
256, Limonite. Bank CVIII. Gitt's opening, 3 miles north of Hanover.
257, Limonite. Bank LVII. Thomas Iron Co.'s lease, 1 mile from Hanover.
258, Sandy argillite. Bank LVII. Delone's bank, 1 mile south of Hanover.
259, Limonite. Bank LVIII. Forney's bank, 1 mile south of Hanover.
260, Ferruginous slate. John Bauman's bank, 1 mile south of Hanover.
261, Ferruginous sandy slate. John Bauman's bank, 1 mile south of Hanover.
262, Dark limonite, with pyrite. John Bauman's bank, 1 mile south of Hanover.
263, Quartz. John Bauman's bank, 1 mile south of Hanover.

264, Limonite. Henry Wirts' farm, 1 mile south of Hanover.
265, Light blue, and white limestone. John Dubbs' quarry, 1 mile north of Hanover.
266, Slaty limestone. Forrey's quarry, 2½ miles north of Hanover.
267, Light blue limestone. Barnitz's quarry, 2¾ miles north by west of Hanover.
268, Limestone. Barnitz's quarry, 2¾ miles north by west of Hanover.
269, Granular speckled limestone. Samuel Myers' quarry, about 2 miles from Hanover.
270, Light cream colored limestone. Dr. Hendricks' quarry, 3¼ miles north of Hanover.
271, Light colored limestone, streaked with white. Dr. Hendricks' quarry No. 2, 3¼ miles north of Hanover.
272, Massive brecciated sandstone, impregnated with oxide of iron. Benade's opening, 3¼ miles north of Hanover.
273, Limonite. Bank CIX, McConaughy. Benade's opening, 3¼ miles north of Hanover.
274, Dark blue limestone. Benade's opening, 3¼ miles north of Hanover.
275, White crystalline limestone. Bittinger's quarry, 3¼ miles north of Hanover.
276, Limestone. W. & H. Bittinger's quarry, 3¾ miles north of Hanover.
277, Limestone. Wolf's quarry, 4 miles north of Hanover.
278, Ferruginous slate. On Hanover and Carlisle pike, 4½ miles of Hanover.
279, Sandy limonite. Schwartz's farm, Eckert & Bro.'s lease, 2 miles south-west of Hanover on Littlestown road.
280, Slaty conglomerate. Bank LIX. Schwartz's farm, Eckert & Bro.'s lease, 2 miles south-west of Hanover.
281, Compact limonite. Bank LX. S. Schwartz's bank, at Schwartz school house, 2 miles south-west of Hanover, Littlestown road.
282, Chlorite slate. Henry Ramers' quarry, 2 miles south-west of Hanover, Littlestown road.

283, Argillaceous limonite. Sol. Schwartz's bank, in middle of road leading to Littlestown, 3 miles from Hanover.

284, Dark compact limonite. Bank LXI. Boyer's bank, 4½ miles from Hanover.

285, Limonite. Boyer and Schwartz's lease, about 2 miles east of Littlestown.

286, Limonite. Bank LXI. Boyer's bank, 4½ miles south-west of Hanover.

287, Mica slate. G. Baer's farm, ½ of a mile from Maryland line.

288, Chlorite slate, with pyrite. Baer's, 4 miles south-east of Littlestown.

289, Compact chlorite slate. Willet's farm near Baer's, ½ of a mile from Maryland line, 4 miles south-east of Littlestown.

290, Mica slate. Bank LXIV. Krumrein's opening, 3 miles east of Littlestown.

291, Slate, impregnated with iron. Bank LXIII. Krumrein's opening, 3 miles east of Littlestown.

292, Argillite. Krumrein's bank, ¾ of a mile east of Killingers.

293, Mica slate. Bank LXIV. Krumrein's opening, ¾ of a mile east of Killinger's lower opening.

294, Mica slate. Strongly magnetic. Krumrein's opening, ¾ of a mile east of Killinger's upper opening.

295, Slates. Bank LXIV, Göthite, lepidokrocite, &c., in decomposed clay slate. Early & Killinger, 2½ miles east of Littlestown, on Littlestown and Hanover road.

296, Impure limonite, with geodes and stalactites of black glossy ore. Early & Killinger.

297, Sandy decomposed slates. Early & Killinger.

298, Slate, impregnated with iron oxide, carrying göthite. Early & Killinger.

299, Slate, limonite and pyrite. Early & Killinger.

300, Limonite. Early & Killinger.

301, Sandy limonite. Early & Killinger.

302, Conglomerate of slate and Quartz. Early & Killinger.

303, Sandy impure slate, with white clay. Early & Killinger.

304, Shelly limonite, with lepidokrocite. Early & Killinger.
305, Argillite. Early & Killinger.
306, Blue and white striped limestone. Solomon Mehring's farm, 1½ miles east of Littlestown.
307, Coarse ferruginous conglomerate. Bank LXI. Commons near Littlestown, Schwartz & Boyer's lease, Clark's property.
308, Limonite. No. LXVI. Clark's property, Schwartz & Boyer's lease, 1½ miles east of Littlestown.
309, Coarse limonite, with vein of quartz. Bank LXV. Lefever's bank, 1¼ miles north-east of Littlestown.
310, Limonite. Lefever's bank, 1½ miles north-east of Littlestown.
311, Sandy yellow ochre. Lefever's opening.
312, Conglomerate. Littlestown, ½ of a mile north of Centre square.
313, Dolerite. ⅝ of a mile north of Littlestown, in field east of Gettysburg pike.
314, Blue limestone, streaked with white. Edward Gliffer's quarry, ¾ of a mile north-west of Littlestown, north of Gettysburg turnpike.
315, Dolerite. 1 mile north of Littlestown, on Whitehall road.
316, Red sandstone. New Red. 1 mile north-west of Littlestown.
317, Coarse conglomerate of Mesozoic sandstone. 1 mile south-west of Littlestown, north of Littlestown and Frederick road.
318, Red sandstone. 1 mile south-west of Littlestown, north of Littlestown and Frederick road.
319, Red sandstone. 2 miles south-west of Littlestown, on Taneytown road.
320, Red sandstone. 2½ miles south-west of Littlestown, near Maryland line.
321, Slaty conglomerate. Codorus hills, 1 mile from Maryland line.
322, Mesozoic sandstone stained with malachite. Bridge over Fox run, on Bull road, ½ mile south of Dover road.

323, Sandstone stained with malachite. Bull's road bridge on Fox run, ½ mile from Dover road.

324, Semi-anthracite fragments. B. Gross, on Liverpool road, ¾ of a mile north of Liverpool, on Little Conewago.

325, Argillaceous Mesozoic, light colored limestone between sandstone and accompanying coal. B. Gross, ¾ of a of a mile north of Liverpool.

326, Mesozoic mud rock, with plates of impure coal. B. Gross, on Liverpool road, on Little Conewago, (Spahn's farm adjoining Gross.)

327, Mesozoic limestone, between sandstones accompanying coal. B. Gross, ¾ mile north of Liverpool; Gross' hill.

328, Mesozoic calcareous sandstone. B. Gross, ¾ mile from Liverpool, on Little Conewago, between Gross and Spahn's.

329, Clay and coal. B. Gross, ¾ mile north of Liverpool; J. Spahn's farm.

330, Sandy slate, with specular iron. W. R. Smith, ½ mile west of Conewago.

331, Micaceous ore and magnetite. Strongly magnetic. W. R. Smith, ¼ mile west of Conewago.

332, Mesozoic mud rock. W. R. Smith, ¼ mile west of Conewago.

333, Sandstone, with specular iron. W. R. Smith, ¼ mile west of Conewago.

334, Dolerite. Bank CXX. S. Lichte's bank, on Dillsburg and Berlin road, 9 miles from Dillsburg.

335, Ferruginous sandstone. S. Lichte's bank, on Dillsburg and Berlin road, 15 miles from York.

336, Porous sandstone, with fragments of the chlorite slates. Benner's hill, second field north of farm house.

337, Clay slate. Benner's hill.

338, White sandstone. Benner's hill, across road from farm house.

339, Dolerite with hornblende. Granite spur.

340, Dolerite, with hornblende. Culp's hill.

341, Slaty sand rock, impregnated with magnetic iron ore. Strongly magnetic, McKnight's hill.

342, Hornblende and epidote. Magnetic. McKnight's hill.
343, Hornblende, with epidote. McKnight's hill.
344, Felspar porphyry. McKnight's hill.
345, Hornblendic dolerite. Devil's Den.
346, Red hematite, micaceous ore with malachite. "Mumper" mine, McCormick's bank.
347, Limonite. Reading Coal and Iron Co.'s bank, six and a half miles from Dillsburg.
348, Magnetic and micaceous ore. Bank CXXI, magnetic. Near "Atland" bank; McCormick's.
349, Specular ore. Bank CXXI, Mine bank. Near "Atland" bank; McCormick's.
350, Magnetic and micaceous ore. Bank CXXI. "Atland" or Mine bank, 6½ miles south of Dillsburg.
351, Magnetic ore, with calcite and malachite. Bank CXXI, magnetic. "Atland" bank.
352, Ferruginous argillite. North end of McCormick's property; Becker's farm.
353, Magnetic ore. Strongly magnetic. A. P. Walker, Rossville.
354, Tourmaline. A. P. Walker, Rossville.
355, Sandy limonite. (Fuller's) strongly magnetic. Field 100 feet from Ex-Gov. Porter's old opening on Yellow Breeches creek.
356, Clay ore. Strongly magnetic. Landis' farm on Yellow Breeches creek, near Coover's bridge.
357, Clay matrix, with limonite, magnetite, and pyrite. Strongly magnetic. Underwood mine, 1 mile from Dillsburg.
358, Clay matrix, with limonite, magnetite, and pyrite. Strongly magnetic. Underwood.
359, Decomposed slate, with oxide of iron. Strongly magnetic. McCormick's "Mumper" mine, 1 mile north-east of Dillsburg.
360, Specular magnetic ore. Bank CXXIII, strongly magnetic. McCormick's mine, 1 mile north-east of Dillsburg.
361, Dolerite. McCormick's Mumper mine, 1 mile north-east of Dillsburg.

362, Dolerite. Logan shaft, McCormick's mine.
363, Dolerite. McCormick's mine, 1 mile south-east of Dillsburg.
364, Dolerite. McCormick's Mumper mine, 1 mile north-east of Dillsburg.
365, Limonite. Bank CXXV. Bender's farm, Stoner and Hildebrand's lease.
366, Limonite and specular ore in clay. Wolf's bank, $3\frac{1}{2}$ miles west of Dillsburg.
367, Arenaceous limonite. Heck's, $\frac{1}{2}$ mile north of Wolf's.

370 to 1,364—P. FRAZER, 1875.

York, Adams, and Franklin Counties.

370, Trap. *On Government map marked A. 800 feet north-west of summit of Little Round-Top.

371, Trap. On Government map marked B. North side of Devil's Den

372, Trap. On Government map marked C. West slope of Round-Top.

373, Trap. On Government map marked D. Vincent's Spur.

374, Trap. On Government map marked E. Near Cassalt's, Taneytown road.

375, Trap. On Government map marked F. East face of Culp's hill.

376, Indurated mud rock. On Government map marked G. 100 yards south of Rock creek bridge.

377, Indurated mud rock. On Government map marked H. 600 yards south of Rock creek bridge.

378, Trap. On Government map marked I. ½ mile south of Rock creek bridge—east bank.

379, Trap. On Government map marked J. Wolf's hill, ¼ mile from McAllister's mill.

380, Trap (dolerite). On Government map marked K. Crossing of Seminary Ridge by Springs road.

381, Trap. On Government map marked L. Loose boulder, part of breastworks, Cemetery Hill.

382, Trap. On Government map marked M. Breastworks on Cemetery Hill.

383, Shales. Underlying trap in first cut Tape Worm railroad, northwest of Gettysburg.

384, Altered sandstone, weathered. Marked on Government map N. Cut of Tape Worm railroad, north-west of Gettysburg.

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*The very detailed and accurate map of the Gettysburg battle field in contour lines made by the officers of the U. S. army, was used for the purpose of locating geological features.

385, Indurated mud rock. Cut of Tape Worm railroad, north-west of Gettysburg.
386, Magnetic ore and pyrite. Underwood's Mine, Dillsburg, York county.
387, Green shaly sandstone. Shaft, Underwood's Mine.
388, Green shaly sandstone. Shaft, Underwood's Mine.
389, Very hard pink sandstone. Sandstone heap outside of Underwood's mine.
390, Green sandstone. Underwood's new opening.
391, Dolerite surface rock. Underwood's open bank.
392, Greenish limestone occurring in the ore. Same mine.
393, Greenish limestone, bottom rock. Same mine.
394, Greenish chloritic sandstone. Heap outside of Underwood's mine.
395, Garnets in green sandstone. Heap outside of Underwood's mine.
396, Magnetic ore. Underwood's new opening.
397, Trap. Top rock. Underwood's new opening.
398, Altered sandstone. Underwood's mine.
399, Decomposed rock occurring in the ore.
400, Magnetic ore. Shaft, McCormick & Co.'s mine, Dillsburg, York county.
401, Magnetic ore with pyrite. Shaft, McCormick & Co.'s.
402, Magnetic ore with pyrite. Shaft, McCormick & Co.'s.
403, Chlorite rock. McCormick & Co.'s "long cut."
404, Sandstone, top rock. McCormick & Co.'s mine, "long cut."
405, Trap. Top rock. McCormick & Co.'s mine proper, Logan's shaft.
406, Limestone, foot rock. McCormick & Co.'s mine.
407, Top rock, chlorite rock. MacWilliams' mine, Bell's farm, Dillsburg, York county.
408, Magnetic ore. MacWilliams' mine, Bell's farm.
409, Chlorite rock. MacWilliams' mine, Bell's farm.
410, Mud-rock; top rock. MacWilliams' mine, Bell's farm,
411, Magnetic ore. Grove's mine, 2 miles north-east of Dillsburg road to York.
412, Altered sandstone; top rock. Grove's mine.

413, Magnetic ore. Fuller's mine, Landis' farm, Yellow Breeches creek.
414, Micaceous ore. Fuller's mine.
415, Decomposed trap (?); top rock. Fuller's mine.
416, Limestone; bottom rock. Fuller's mine.
417, Altered sandstone (?) containing ore. Landis' farm.
418, Limestone. Railroad cut near Dillsburg, York county.
419, Trap. Railroad cut; occurs next to limestone above.
420, Trap. Railroad cut near Dillsburg.
421, Limestone conglomerate (Mesozoic) containing rounded pebbles of older limestone. Kuntz's farm, near Dillsburg.
422, Limestone conglomerate. Pit ½ mile south-west of Dillsburg.
423, Limestone. Mill dam, Miller's Mill, near Dillsburg.
424, Mesozoic limestone (marlite?) Welty's farm, Dillsburg.
425, "Marl" (?); Mesozoic limestone conglomerate. Welty's farm, Dillsburg.
426, Limestone, Mesozoic. Railroad cut near Dillsburg.
427, Mesozoic. Welty's farm, Dillsburg.
428, Sandstone. On hill near Carlisle road, ¾ mile north of Dillsburg.
429, Red sandstone. Road opposite McCormick s "long cut."
430, Orthofelsite (?). 2½ miles north-east of Dillsburg.
431, Sandstone. Harrisburg road, ½ mile north-east of Dillsburg.
432, Grayish-pink sandstone. ½ mile east of Dillsburg on road to mines.
433, Quartzite and sandstone. Foot of South mountain, ¾ mile north-west of Dillsburg.
434, Trap. Round Top, Warrington township, York county.
435, Decomposed trap. Round top.
436, Decomposed trap; top rock. Shelly's bank, Cumberland county.
437, Trap of alteration (?) Railroad cut near Dillsburg.
438, Trap. ½ mile north-west of Dillsburg, on hill.

439, Trap of alteration (?) On Harrisburg road, ½ mile north-east of Dillsburg.
440, Decomposing trap. ½ mile south-west of Dillsburg.
441, Gray sandstone. Harrisburg road, ½ mile northeast of Dillsburg.
442, Trap. Lerew's farm, ¼ mile south of Dillsburg.
443, Trap. O. Hale's school house road, 1¾ miles east of Dillsburg.
444, Mesozoic sandstone. Logan's diggings, 1¼ miles east of Dillsburg.
445, Lilac sandstone. Near O. Hale's school house, 2 miles east of Dillsburg.
446, Porphyritic trap. John Meyers' farm, 3½ miles east of Dillsburg.
447, Red sandstone. M. Porter's farm, ½ mile south-west of Dillsburg.
448, Trap. M. Porter's farm, in field on hill, Gettysburg road.
449, Trap. C. Bender's farm, Gettysburg road, 1½ miles south-west of Dillsburg.
450, Trap. M. Porter's farm, Gettysburg road, ½ mile south-west of Dillsburg.
451, Quartzite. "White rock," South mountain, Cumberland county.
452, Trap. McClure's farm, 4 miles south-east of Dillsburg.
453, Asbestus and ore. McElwee's farm, 4 miles south-east of Dillsburg.
454, Sandstone. McElwee's farm.
455, Sandstone, with coating crystalline quartz. McElwee's.
456, Trap. McCormick's mine, 1 mile east of Dillsburg.
457, Magnetite, micaceous ore and asbestus. McElwee's.
458, Asbestus in feldspar. McElwee's farm.
459, Conglomerate, micaceous ore and asbestus. McElwee's.
460, Trap. McElwee's farm, from shaft.
461, Decomposed trap. J. Crowell's house, 6 miles south-east of Dillsburg.
462, Sandstone coated with micaceous ore. G. Ellicker's farm, 5 miles east of Dillsburg.

463, Sandstone and iron oxide.
464, Magnetic and micaceous ore and limonite. Coockson's farm, 2 miles east of Dillsburg.
465, Magnetic ore. Price and Hancock's mine, 2 miles east of Dillsburg.
466, Magnetic ore and red oxide. Rossville, 2½ miles east of Mt. Top P. O.
467, Magnetic ore. M. Wiley's farm, 2½ miles from Mt. Top P. O.
468, Sandstone carrying micaceous ore. E. F. Cookson's, 8 miles east of Dillsburg.
469, Sandstone carrying micaceous ore. Peter H. Myers', 5 miles east of Dillsburg.
470, Sandstone hardened by contact with trap. Wellsville road to "Black" (Blue) Ridge.
471, Trap. ¾ mile south-east of Wellsville.
472, Decomposed trap. S. Marsh's farm, 1½ miles south-east of Wellsville.
473, Quartz crystals in syenite. Harman's farm, 1 mile north-west of Wellsville.
474, Sandstone coated micaceous ore. D. Cadwalader's, 1¼ miles west of Wellsville.
475, Decomposed ferruginous rock, with chlorite. Buschey's farm, 1¼ miles west of Wellsville.
476, Dolerite. S. Marsch's farm, 1½ miles south-east of Wellsville.
477, Compact porphyritic syenite. Harman's farm, 1 mile north-west of Wellsville.
478, Coarse porphyritic syenite. Harman's shop.
479, Asbestus. S. Marsch's farm, 1½ miles south-east of Wellsville.
480, Decomposed ferruginous trap. D. Altland's, 1¼ miles west of Wellsville.
481, Mud rock. On top of Blue Ridge. Extends south of Rossville and Wellsville.
482, Micaceous ore. W. R. Smith's farm, 3 miles east of Hall P. O.
483, Weathered trap. D. Cadwalader's, 1¼ miles west of Wellsville.

484, Argillaceous greenish sandrock. Blue ridge.
485, Weathered trap. W. R. Smith's.
486, Magnetic float ore. S. Marsch's farm, 1½ miles south-east of Wellsville.
487, Feldspathic trap. M. Porter's farm, ½ mile south-west of Dillsburg.
488, Light colored argillaceous sandstone. H. Heiges', 3 miles south-west of Dillsburg.
489, Hematite ochre and black glassy ore. Lerew's farm, ¼ mile north-east of Lerew's tavern.
490, Trap. M. Porter's farm, ½ mile south-west of Dillsburg, Gettysburg road.
491, Wash ore. H. Heiges' corn-field, 3 miles south-west of Dillsburg.
492, Conglomerate sand rock. H. Heiges' farm.
493, Concretionary limonite. Wolf's farm, 3 miles south-west of Dillsburg.
494, Trap. M. Porter's farm, ½ mile south-west of Dillsburg.
495, Coating on hard trap. McElwee's farm, 4 miles south-east of Dillsburg.
496, Asbestus. McElwee's farm.
497, Trap. McElwee's farm.
498, Contact of fine and coarse-grained trap. McElwees.
499, Ferruginous conglomerate, with micaceous ore. McElwee's.
500. Sandstone with surface of quartz pebbles. McElwee's farm, 4 miles south-east of Dillsburg.
501, Impure hematite ore. Christian Bender's, 2 miles south-west of Dillsburg.
502, Impure iron ore, mixed with copper. Lichte's bank, 10 miles south-west of Dillsburg.
503, Earthy sandstone. Price's farm, 2 miles south-east of Dillsburg.
504, Sandstone. S. Filler's, 2 miles south-west of Dillsburg.
505, Ferruginous greenish sandstone. Price's farm, 2 miles south-east of Dillsburg.

506, Mesozoic sandstone. Adams county line on road to Dillsburg, near Braggtown.
507, Limestone. Old quarry on Brennan's farm.
508, Micaceous ore and copper. J. T. Smith's, 3 miles south of Wellsville.
509, Reddish-green sandstone. C. Bender's farm, 2 miles south-west of Dillsburg.
510, Dirt containing ore. Geo. Heiges', 3½ miles south-west of Dillsburg.
511, Surface ore. Jno. Lehmer's, 1½ miles north-east of Franklintown.
512, Mesozoic sandstone. Mill dam, 3 miles south of Franklintown.
513, Mesozoic sandstone. From shaft on Geo. Heiges' farm, 3 miles south-west of Dillsburg.
514, Stained sandstone. Grove's farm, 2 miles south-east of Dillsburg.
515, Hematite ore (not magnetic). McCormick & Co.'s mine, 1½ miles south-west of Dillsburg.
516, Scoriaceous sandstone and micaceous ore. Nickey's, 3 miles south of Wellsville.
517, Sandstone and micaceous ore. J. T. Smith's, 3 miles south of Wellsville.
518, Red sandstone spotted with green on fresh fracture. One mile south of Franklintown.
519, Decomposed sandstone with particles of magnetite. Jno. Lehmer's, ½ mile north-east of Franklintown.
520, Mesozoic sandstone from old lime kiln. H. Bender's, 1½ miles south-west of Dillsburg.
521, White sandstone. C. Bender's, 1½ miles south-west of Dillsburg.
522, Decomposed coarse-grained trap. Geo. Heiges', 3 miles south-west of Dillsburg.
523, Coarse-grained trap. Geo. Heiges', 3½ miles south-west of Dillsburg.
524, Porphyritic trap. Large pegmatolite crystals. Old Berlin road, 9 miles south-west of Dillsburg.
525, Argillaceous greenish sandstone. Geo. Heiges', 3½ miles south-west of Dillsburg.

526, Micaceous ore in yellow sandstone. Jacob Smith's, 3 miles south of Wellsville.

527, Mesozoic sandstone. Adams county line, near Braggtown, road to Dillsburg, 9 miles south-west of Dillsburg.

528, Mesozoic sandstone. 1 mile south-east of Braggtown, Adams county.

529, Decomposed coarse syenite. Porphyritic and very ferruginous. H. Heiges', $2\frac{1}{3}$ miles south-west of Dillsburg.

530, Coarse conglomerate limestone. Green from contained chlorite schists. Brennan's old quarry, $1\frac{1}{2}$ miles south-west of Dillsburg.

531, Micaceous ore. J. T. Smith's, 3 miles south of Wellsville.

532, Clay lumps with limonite. 1 mile north of Mt. Top P. O. Presented by Mr. Altland.

533, Coarse Mesozoic sandstone. C. Bender's, $1\frac{1}{2}$ miles south-west of Dillsburg.

534, Outcrop hematite ore. C. Bender's, $1\frac{1}{2}$ miles south-west of Dillsburg.

535, Hard altered sandstone. Grove's farm, $1\frac{1}{2}$ miles south-east of Dillsburg.

536, Coarse-grained granitic syenite. Harman's, 1 mile west of Wellsville.

537, Coarse felspathic syenite. Much weathered. A. Heiges', $3\frac{1}{2}$ miles south-west of Dillsburg.

538, Greenish shale. Mill dam, $3\frac{1}{2}$ miles south of Franklintown.

539, Coarse conglomerate sandstone carrying ore. Price's, 2 miles south-east of Dillsburg.

540, Limestone. Carrying green schist fragments. H. Bender's, $1\frac{1}{2}$ miles south-west of Dillsburg.

541, Arenaceous limonite. J. Lichte's, 3 miles north-west of Davidsburg.

542, Mesozoic sandstone. $\frac{1}{4}$ mile north of Franklintown.

543, Mesozoic shale. 1 mile north-east of Braggtown.

544, Sandstone with spots of iron oxide. Carrying the ore. C. Bender's, $1\frac{1}{2}$ miles south-west of Dillsburg.

545, Ferruginous coarse-grained trap. Much weathered. Geo. Heiges', 3½ miles south-west of Dillsburg.
546, Weathered trap. Containing micaceous iron in small plates. Geo. Heiges'.
547, Mud rock. J. T. Smith's, 3 miles south of Wellsville.
548, Dolerite. J. Lichte's, 3 miles north-west of Davidsburg.
549, Mesozoic sandstone coated with copper. Pinkish green in fresh fracture. Lehmer's, ½ mile north-east of Franklintown.
550, Syenitic granite. S. Heiges', 3½ miles south-west of Dillsburg.
551, Clay shales accompanying hematite. Chas. Bender's, 1½ miles south-west of Dillsburg.
552, Mesozoic sandstone. J. T. Smith's, 3 miles south of Wellsville.
553, Red sandstone. 1 mile south of Franklintown.
554, Trap. Much weathered. Geo. Heiges', 3½ miles south-west of Dillsburg.
555, Coarse-grained syenitic granite (?) Dark reddish brown color. Geo. Heiges'.
556, Coarse-grained syenitic granite (?) A. Heiges', 3½ miles south-west of Dillsburg.
557, Sandstone. M. Elicker's, 5 miles east of Dillsburg, south of Mt. Pleasant.
558, Sandstone, with some ore. M. Elicker's farm.
559, Purple mud rock. Adams county line, 9 miles south-west of Dillsburg.
560, Mesozoic sandstone. ½ mile south of Franklintown.
561, Bood red sandstone. Argillaceous. 3 miles south of Dillsburg.
562, Light red sandstone. 3½ miles south of Dillsburg.
563, Felspathic syenite. Very large feldspar crystals. 9 miles south-west of Dillsburg.
564, Coarse-grained sandstone. Spangles of micaceous iron ore. P. A. Myers', 5 miles east of Dillsburg.
565, Argillaceous sandstone. 3½ miles south-west of Dillsburg.
566, Hard sandstone. 3½ miles south-west of Dillsburg.
567, Dolerite. E. Hoffman's, 6 miles east of Dillsburg.

568, Argillaceous sandstone. 1 mile south-east of Braggtown.

569, Sandstone and coating of micaceous ore. M. Elicker's, 5 miles east of Dillsburg.

570, Argillaceous sandstone. John Lehmer's, ½ mile north-east of Franklintown.

571, Red sandstone. Bermudian creek, 8 miles south-west of Dillsburg.

572, Trap of alteration. S. Heiges', 3½ miles south-west of Dillsburg.

573, Red sandstone. P. Burkhart's, 3 miles south of Dillsburg.

574, Mesozoic sandstone. 3 miles south of Dillsburg.

575, Trap (of alteration?) Old Berlin road, 9 miles south-west of Dillsburg.

576, Red and blue shale. E. Hoffman's, 6 miles east of Dillsburg.

577, Syenitic granite. E. Hoffman's.

578, Hard baked blue mud rock. Old Berlin road, 9 miles south-west of Dillsburg.

579, Dark purple argillaceous sandstone. Levi Cannon's, 4½ miles east of Dillsburg.

580, Mesozoic shale. Mill dam, 3½ miles south-east of Franklintown.

581, Trap. Levi Cannon's, 4½ miles east of Dillsburg.

582, Trap of alteration (?) Levi Cannon's.

583, Mesozoic sandstone. Levi Cannon's.

584, Coarse-grained sandstone pitted with iron oxide. Jno. Kimmel's, 5 miles east of Dillsburg.

585, Syenitic granite. Levi Cannon's.

586, Hard blue mud rock. P. A. Myers', 5 miles east of Dillsburg.

587, Coarse yellow and green sandstone. Cross-roads, sign post 5 miles to Lewisberry, and 5 miles east of Dillsburg.

588, Greenish sandstone carrying ore. Jno. Lehmer's, ½ mile north-east of Franklintown.

589, Light bluish mud rock. 9 miles south-west of Dillsburg.

590, Trap. E. Hoffman's, 5 miles east of Dillsburg.
591, Coarse greenish sandstone, with coating of micaceous ore. P. A. Myers', 5 miles east of Dillsburg.
592, Conglomerate (?) S. Heiges', 3½ miles south-west of Dillsburg.
593, Coarse-grained trap. 9 miles south-west of Dillsburg.
594, Trap. E. Hoffman's, 5 miles east of Dillsburg.
595, Asbestus. (Missing.) M. Elicker's, 5 miles east of Dillsburg.
596, Green sandstone carrying magnetic ore. M. Elicker's.
597, Trap. Morgenthaler's, 1½ miles east of Wellsville.
598, Coarse sandstone carrying magnetic ore. Morgenthaler's, 1½ miles north of Wellsville.
599, Magnetic ore. Morgenthaler's, north of Wellsville.
600, Coarse pink sandstone. Missing. Morgenthaler's, 1½ miles north of Wellsville.
601, Green sandstone. Morgenthaler's farm shaft.
602, Magnetic ore. M. Wiley's farm, from field 1 mile east by north of Wellsville.
603, Bluish mud rock. M. Wiley's farm.
604, Argillaceous bluish sandstone. M. Wiley's farm, north of Wellsville.
605, Magnetic float ore. M. Wiley's, north of Wellsville.
606, Yellow clay. Morgenthaler's, 1½ miles north of Wellsville.
607, Trap (weathered). Franklintown road, 1½ miles north-east of Rossville.
608, Trap. Franklintown road, 1¼ miles north-east of Rossville.
609, Purplish argillaceous sandstone. ½ mile north-west of Wellsville.
610, Argillaceous red sandstone with green spots. J. Griest's farm, ½ mile north-west of Wellsville.
611, Clay. J. Griest's, ½ mile north-west of Wellsville.
612, Argillaceous blue sandstone, with bright red coating. J. Griest's farm, ½ mile north-west of Wellsville.
613, Coarse-grained trap. 2 miles north-west of Wellsville.
614, Very coarse syenitic granite, with bunch of asbestus. Harman's, 2 miles north-west of Wellsville.

615, Trap. ½ mile north-west of Wellsville.
616, Coarse grayish sandstone. ½ mile ditto.
617, Reddish mud-rock. ¾ mile ditto.
618, Arenaceous purple mud-rock. ½ mile ditto.
619, Red mud-rock with green spots. ½ mile ditto.
620, Hard blue mud-rock. ½ mile ditto.
621, Argillaceous lamellar variegated sandstone. ¾ mile north-west of Wellsville.
622, Mesozoic sandstone. ¾ mile ditto.
623, Iron stained sandstone, coating of micaceous ore. Greenish in place. J. Graber's farm, ¾ of a mile north-west of Wellsville.
624, Magnetic syenite. Harman's farm, Altland's shaft in woods, 2 miles north-west of Wellsville.
625, Alteration of sandstone to syenite (?). Harman's farm, Atland's shaft on hill.
626, Mesozoic sandstone. Harman's farm.
627, Bluish sandstone. Shaft in woods ¼ mile north of Comfort's store, on State road, near Wellsville.
628, Greenish sandstone containing magnetic ore. Comfort's farm, 2 miles west of Wellsville.
629, Sandstone carrying ore. J. Baker's farm, 1 mile west of Wellsville.
630, Grayish sandstone carrying ore. Comfort's farm, 2 miles west of Wellsville.
631, Hard sandstone. Near Comfort's store, 2 miles west of Wellsville. Greenish when in place.
632, Sandstone (slightly magnetic). Comfort's. Dillsburg-Wellsville road.
633, Ferruginous sandstone Comfort's. 2 miles west of Wellsville.
634, Altered (?) ferruginous sandstone. Comfort's. Dillsburg-Wellsville road.
635, Syenite (?). H. Kimmel's, 2 miles south-west of Wellsville.
636, Bluish argillaceous sandstone. State road to York, ½ mile south-west of Wellsville.
637, Purplish slate. F. Cookson's farm, ¾ of a mile north-west of Rossville.

638, Sandstone. Bottle-green when in place. F. Cookson's.
639, Blue mud-rock, baked. ½ mile north-west of Rossville.
640, Dolerite (?) ½ mile north-west of Rossville.
641, Blue mud-rock, hard and compact. ¾ mile north-west Rossville.
642, Quartzite and micaceous ore. F. Cookson's farm, ¾ of a mile north-west of Rossville.
643, Argillaceous greenish sandstone. ditto
644, Trap (?). ⅜ mile ditto.
645, Blue mud-rock. ½ mile ditto.
646, Argillaceous sandstone. Old York road, ½ mile east of Rossville.
647, Sandy mud-rock with surface lumps; material more argillaceous. One fourth of a mile south-west of Rossville.
648, Milky quartz. ¾ mile ditto.
649, Trap (magnetic). York road, ¾ of a mile ditto.
650, Dolerite. (Missing.) "Old" York road, 1¼ miles east of Rossville.
651, Coarse red sandstone. Three miles south-west of Rossville.
652, Blue mud-rock. York road, ⅛ of a mile south-west of Rossville.
653, Olive colored argillaceous sandstone. York road, ⅛ of a mile south-west of Rossville.
654, Argillaceous olive sandstone. ditto.
655, Bluish sandstone. ditto.
656, Clay. Jacob Breneman's, ¼ mile north-west of Wellsville.
657, Clay. M. Wiley's, 1 mile north of Wellsville.
658, Blue mud-rock. Foot of "Round Top," 3½ miles north-east of Rossville.
659, Gray sandstone, pink tint. North side of "Round Top," 3½ miles north-east of Rossville.
660, Bluish mud-rock. Foot of "Round Top." ditto
661, Trap. Foot of "Round Top."
662, Trap. Foot of "Round Top."
663, Weathered Trap. Foot of "Round Top," 3½ miles north-east of Rossville.

664, Trap. 2 miles north-east of Rossville.
665, Fine-grained sandstone. Near mine bank, Altland's mine, 2¼ miles south-west of Wellsville.
666, Argillaceous sandstone, copper coating. John Sluthauer's, next to "Mine" bank.
667, Variegated sandstone, with dark colored calcite crystals. John Sluthauer's, next "Mine" bank.
668, Magnetic ore. Joseph Bentz's, 2 miles south-west of Wellsville.
669, Red shale. 1 mile north of Kralltown.
670, Greenish argillaceous sandstone. Just south-east of Kralltown (Hall P. O.)
671, Coarse quartzose sandstone. ½ mile east of Hall P. O.
672, Baked mud-rock. ¼ mile ditto.
673, Baked arenaceous mud-rock. Left bank of Bermudian Creek, ½ mile south of Hall P. O.
674, Quartzite. Small run, ½ mile north-east of Hall P. O.
675, Very coarse sandstone. Carlisle-York road, 1¼ miles south-east of Dover.
676, Coarse sandstone. Carlisle-York road, 1 mile south-east of Dover.
677, Hard red sandstone. Carlisle-York road, 1¼ miles south-east of Dover.
678, Reddish sandstone. 1/16 mile north of Weigelstown.
679, Red conglomerate of quartz pebbles. Carlisle-York road, 3½ miles north-west of York.
680, Coarse red sandstone. Carlisle-York road, ½ mile south-east of Weigelstown.
681, Purplish sandstone. Carlisle-York road, 2½ miles north-west of York.
682, Dark gray sandstone, top rock. "Mine" bank, Altland's mine, 2½ miles south-west of Wellsville.
683, Dark gray sandstone, bottom rock. Coated with micaceous ore. "Mine bank."
684, Trap of alteration (?). "Mine" bank, Altland's mine, 2½ miles south-west of Wellsville.
685, Blue mud-rock, with aragonite. "Mine" bank.
686, Malachite. "Mine" bank.
687, Micaceous ore mixed with copper. "Mine" bank

688, Calcite, with iron ore and copper. "Mine" bank.
689, "Clay," limonite. "Mine" bank.
690, Red sandstone. Carlisle-York road, 1 mile north-west of Dover.
691, Coarse gray sandstone with yellow grains. Carlisle-York road, $\frac{3}{4}$ of a mile north-west of Dover.
692, Mesozoic sandstone. Carlisle-York road, ditto.
693, Coarse sandstone. Carlisle-York road, $\frac{1}{4}$ mile south-east of Dover.
694, Bluish-green lamellar sandstone. Carlisle-York road, $\frac{1}{4}$ mile south-east of Dover.
695, Trap (fine and coarse grained.) North of Round Top, 5 miles north-east of Rossville.
696, Slaty limestone. Allison's mill, $\frac{1}{2}$ mile north of Benade's opening.
697, Mud-rock underlying limestone. Sprenkle's farm, $\frac{1}{2}$ mile west of Menges' Mill Station (Short Line R. R.)
698, Chlorite slate and limestone. (Missing.) Allison's mill, $\frac{1}{2}$ mile north of Benade's quarry.
699, Hydro-mica chlorite slate. Wilson's farm, Benade's slate quarry.
700, Ore. Sprenkle's farm, $\frac{1}{2}$ mile west of Menges' Mill Station, (Short Line railroad).
701, Impure limonite Sprenkle's farm, $\frac{1}{2}$ mile west of Menges' Station.
702, Magnetic ore. Martin Smyser, 1 mile east of Dillsburg.
703, Ore. H. O. Shelley's, Cumberland county, near Fuller's mine.
704, Earthy Hematite. 1 miles north-west of Wellsville. Harman's blacksmith shop.
705, Scale of vein matter 40′ from surface and crystals of specular iron. J. Deardorff's farm, 3 miles east of Dillsburg.
706, Trap. $\frac{1}{2}$ mile north-east of New Chester, (Adams county).
707, Trap. 1 mile south-west of New Chester.
708, Thin slab friable gray and purple streaked sandstone. Near fork Dillsburg-York road, 1 mile north of Dover.

709, Argillaceous sandstone. Ore-digging at brick yard north-east of Gettysburg.

710, Coarse red sandstone. Dillsburg-York road, 1 mile north-west of Dover.

711, Red sandstone. Conewago hills, Dover-Dillsburg road, $2\frac{3}{4}$ miles north-west of Dover.

712, Shale containing magnetic ore. South-east heading of first gangway, Mickley's mine, 2 miles north-west of McKnightstown (Adams county).

713, Crystallized calcite occurring in ore. Middle level of slope, Adam Minter's farm, 2 miles north-west of McKnightstown.

714, White argillaceous sandstone. Minter's farm.

715, Green chloritic top rock. Minter's farm.

716, Calcite in ore. Minter's ore bank, 55 foot level.

717, Decomposed clay shale. Foot wall at heading of first gangway, Minter's farm.

718, Trap. Carriage shop, Chambersburg pike, 3 miles north-west of Gettysburg.

719, Trap. Chambersburg pike, 3 miles north-west of Gettysburg.

720, Calcareous conglomerate. Minter's farm and ore bank, 2 miles north-west of McKnightstown.

721, Red sandstone. 2 miles north north-west of McKnightstown. Minter's bank.

722, Clay. A. Minter's ore bank, 2 miles north north-west of McKnightstown.

723, Baked mud-rock. A. Minter's bank, ditto.

724, Hydro-mica slate (?). 1 mile north north-west of Glen Rock, N. C. R. R.

725, Sandy slates. 1 mile south-east of Spring Forge, road to Hanover Junction.

726, Sandstone, slate and milky quartz. 1 mile east of Spring Forge.

727, Trap. Geo. Bange's quarry, G. H. and H. J. R. R., at Hanover.

728, Chlorite slate, heavy bedded. Glen Rock, N. C. R. R.

729, Limestone. 1 mile east of Spring Forge.

730, Hydro-mica slate with pyrite casts. 1½ miles north-west of Hanover Junction.
731, Sandy slate. 1 mile east of Spring Forge.
732, Dolerite (?). Seminary Ridge, ¾ of a mile north-west of Gettysburg.
733, Slate. Forrey's farm, ¾ of a mile south of Menges' Station, S. L. R. R.
734, Chloritic slates convoluted. ½ mile south of Seitzland Station, N. R. C. R.
735, Trap. Dillsburg.
736, Ore (slightly magnetic). A. Minter's bank, 2 miles north north-west of McKnightstown.
737, Calcareous slate. Shrewsbury, on N. C. R. R.
738, Arenaceous chlorite slate. Glen Rock, N. C. R. R.
739, Trap. Logansville, on Baltimore-York pike.
740, Hydro-mica slate. Red Lion Station, Peach Bottom railroad.
741, Hydro-mica slate. Dallastown Station, P. B. R. R.
742, Hydro-mica slate. Red Lion Station, P. B. R. R.
743, Hydro-mica slate with pits of pyrites. 1½ miles north-west of Dallastown Station, P. B. R. R.
744, Sandy hydro-mica slate. Fissel's Mill, ¼ mile north by east of tunnel, N. C. R. R.
745, Hydro-mica slate. Springvale Station, Peach Bottom railroad.
746, Trap. 1 mile north of Hanover, on Carlisle pike.
747, Micaceous ore. Near Bendersville, Shearer's farm.
748, Hydro-mica slate. Just north of Shrewsbury, N. C. R. R.
749, Calcareous slate. Just south of Shrewsbury, N. C. R. R.
750, Ferruginous slate. 1 mile north of New Freedom, to to right of N. C. R. R.
751, Hydro-mica slate. Maryland State line.
752, Micaceous slate with quartz. Glen Rock, N. C. R. R.
753, Cavernous quartzite with quartz. 1 mile east of Emigsville.
754, Hydro-mica slate (?). Resembling limestone in parts. 1 mile south of Wrightsville.

755, Blue slate. One mile south of Wrightsville.
756, Argillaceous mica slate (?). 1 mile south of Wrightsville.
757, Micaceous argillite slate. 2 miles north of Glen Rock, N. C. R. R.
758, Argillite slate. Some of it resembles limestone. 1 mile south of Wrightsville.
759, Earthy mica slate. 3 miles north of Glen Rock, N. C. R. R.
760, Trap. Lichty's ore bank, 4 miles north of Berlin.
761, Trap. Lichty's ore bank, 4 miles north of Berlin.
762, Impure ore. Lichty's ore bank.
763, Trap. J. T. Smith's farm, 5 miles N. W. of Dover.
764, Bluish mud-rock. W. R. Smith's farm, 4½ miles north-west of Dover, on State road.
765, Fine-grained trap. Lichty's ore bank, 4 miles north of Berlin.
766, Micaceous ore. T. J. Smith's farm, 5 miles N. W. of Dover.
767, Micaceous ore. J. T. Smith's farm.
768, Dolerite. Lichty's ore bank, 4 miles north of Berlin.
769, Purplish mud-rock. J. T. Smith's farm, 5 miles north-west of Dover.
770, Decomposed greenish sandstone carrying ore. W. R. Smith's farm, 4½ miles north-west of Dover.
771, Trap. J. T. Smith's farm, 5 miles N. W. of Dover.
772, Earthy limestone. Mine No. 3, Mont Alto, Franklin county.
773, Ore from shaft. W. R. Smith's farm, 4½ miles north-west of Dover.
774, New red sandstone from shaft. W. R. Smith's farm.
775, Arenaceous red shale. Bermudian creek, on old Berlin road.
776, New red sandstone. Hoopes' mill, on Bermudian, 1 mile east of south of Hall P. O.
777, Purplish mud-rock. Hoopes' mill.
778, Red shale. Bermudian creek, near Hoopes' mill, 1 mile above dam.

779, Variegated sandstone. Bermudian creek, ⅛ mile below Hoopes' mill, right bank.
780, Trap. Hoopes' mill, on Bermudian creek.
781, Blue shale, arenaceous. Bermudian creek, 1½ miles south-west of Mechanicsville.
782, Dolerite. Mill dam opposite sandstone quarry, 1½ miles south-west of Mechanicsville, Bermudian creek.
783, Greenish arenaceous shale. Same creek, at stone mill, 3 miles south-east of Petersburg.
784, Quartzose conglomerate. Latimore creek, 2 miles south-east of Petersburg.
785, Variegated sandy mud-rock. Bermudian creek, at Stone mill, 2 miles south-east of York Springs.
786, Red quartz conglomerate. Branch of Latimore creek, near Sawmill dam, 2 miles north of York Springs.
787, Bog ore, large quartz pebbles imbedded. D. P. Lerew's farm, 2 miles north of Petersburg.
788, Trap. D. P. Lerew's farm.
789, Green calcareous rock. D. P. Lerew's farm.
790, Ferruginous sandstone. Lichty's ore bank, 4 miles north of Berlin.
791, Float ore. Adam Hess' farm, on Bermudian creek, near Trimmer's mill.
792, Limestone conglomerate. MacWilliams' slope, 1 mile east of Dillsburg.
793, Quartzite, rose tint, curious fracture. Near Idaville, 1½ miles east of Idaville, on road to Bruch's mine.
794, Coarse-grained trap. Fork of Oxford and Bream's mill roads, east of Idaville.
795, Blue and white streaked slate-rock. Near A. Meal's farm, near Idaville.
796, Trap. Idaville road, Idaville-Petersburg, 2 miles north of Idaville.
797, Ferruginous cross-grained trap. Petersburg-Idaville road, 2 miles north of Idaville, near Plank's farm.
798, Micaceous ore and red oxide, inclosing green sand. Altland's mine, Washington township, York county.
799, Syenitic granite. Harman's blacksmith shop.

800, Ore with interstratified sandstone and pebbles of same. MacWilliams' mine, 1 mile east of Dillsburg.
801, Dolerite. Altland's mine, York county.
802, Trap (?). Altland's mine.
803, Micaceous ore. McCormick's mine. Slightly magnetic.
804, Testaceous limonite. Hake's bank, 3 miles west of Dillsburg.
805, Mass of sandstone and ore in contact with trap. Altland's mine.
806, Hard cupriferous ore. Logan's shaft, Dillsburg.
807, Mammilated ore with nodules of manganese (?). C. Bender's, 1½ miles south-west of Dillsburg.
808, Variegated clay and testaceous ore. C. Bender's bank, 1½ miles south-west of Dillsburg.
809, Green sandstone mixed with ore. Logan's shaft, Dillsburg.
810, Mixed ore and green sandstone, containing crystals of feldspar. Logan's shaft, Dillsburg.
811, Cupriferous decomposed schists. Bender's mine, 1½ miles south-west of Dillsburg.
812, Ore from upper level of slope. A. Minter's bank, north north-west of McKnightstown.
813, Red shale. Adam Hess' farm, Bermudian creek, 4 miles above Trimmer's mill.
814, Reddish argillite, spots and streaks of green. 1 mile above Trimmer's mill, Bermudian creek.
815, Hard finely laminated argillite. 1 mile north-west of Trimmer's mill, Bermudian creek.
816, Sandy argillite. ¼ mile east of Trimmer's mill, Bermudian creek.
817, Red sandstone. ¼ mile, ditto.
818, Red sandstone. Near Trimmer's mill, ditto.
819, Coarse-grained red sandstone. Near Trimmer's mill.
820, Finely laminated fine-grained red sandstone. ⅛ of a mile east of Trimmer's mill, on road along creek.
821, Red sandstone. ¼ mile west by south along creek, below dam, Trimmer's mill.

822, Fine-grained syenite, containing vein of quartz, quartz dolerite. (Missing.) Kidd's mill, 2 miles south-east of Kralltown, Bermudian creek.
823, Dolerite. 2 miles south of Kralltown, Bermudian creek.
824, Hard blue argillite or mud-rock. Kidd's mill, 2 miles south of Kralltown, Bermudian creek; up creek, ¾ of a mile above mill.
825, Hard purplish-green argillite. Kidd's mill, Bermudian creek, below mill.
826, Bluish argillite or mud-rock. ⅛ mile below Kidd's mill, Bermudian creek.
827, Dolerite. Same locality, left bank.
828, Trap. ⅛ mile below mill, left bank.
829, Coarse-grained trap. ⅛ mile below mill, left bank.
830, Argillaceous variegated sandstone. ⅛ mile above mill, on right bank.
831, Quartzose sandstone, green streaks, mica ore coating. ⅛ mile above Kidd's mill, Bermudian creek, 2 miles south-east of Kralltown.
832, Grayish-yellow spotted sandstone. Opposite Kidd's mill, on Bermudian creek.
833, Blue mud-rock. ¼ mile above Kidd's mill, Bermudian creek.
834, Mesozoic quartzose sandstone. ¼ mile above Kidd's mill, Bermudian creek.
835, Hornblende rock. Adam Lerew's farm, 2½ miles north from Petersburg.
836, Magnetic surface ore. Adam Lerew's farm, 2½ miles north from Petersburg.
837, Weathered orthofelsite slate. 3 miles north of Petersburg.
838, Epidote rock (?) or so-called copper rock. Near Adam Lerew's farm, 3 miles north of Petersburg.
839, Decomposed slate. 3 miles north of Petersburg, South Mountain, near Lerew's store.
840, Crypto-crystalline slate. Near Lerew's store, 3 miles north of Petersburg.
841, Orthofelsite slate. 3 miles north of Petersburg, near Lerew's store.

842, Orthofelsite slate. Carlisle pike near Lerew's store. Road, 4 miles from Petersburg.

843, Chlorite schist with veins of quartz. Short distance beyond county line, Carlisle pike, 4½ miles from Petersburg.

844, Orthofelsite porphyry. Carlisle pike, 5 miles from Petersburg.

845, Dolerite. Near county line, 5¼ miles north-west of Petersburg.

846, Quartzose schist. Mountain creek rock. Carlisle pike, 5½ miles north-west of Petersburg.

847, Quartzose schist, partly red in color. Mountain creek rock. Carlisle pike, 5½ miles north-west of Petersburg.

848, Orthofelsite porphyry. Carlisle pike, 6 miles north-west of Petersburg.

849, Quartzose schist. Mountain creek rock. Carlisle pike, 6 miles north-west of Petersburg.

850, Brown hematite ore. Mt. Holly ore bank, Medler and Laylor's.

851, Brown hematite ore. Mt. Holly ore bank, Thomas Iron Company.

852, Limonite clay (?) Mt. Holly ore bank, Thomas Iron Company.

853, Greenish sand schist. Mill dam, S. M. R. R., 1 mile north-east of Papertown.

854, Greenish sandstone. At Mt. Holly paper mill.

855, Greenish quartzite. S. M. R. R. cut at Papertown.

856, Slaty sandstone. South Mt. R. R. cut at Papertown.

857, Brown and gray quartzite. South M. R. R. cut at Papertown.

858, Rose-tinted quartzite South Mt. R. R. cut at Papertown.

859, Greenish crystalline schist. Carlisle pike, 5 miles north-west of Petersburg.

860, Greenish crystalline slate rock. Carlisle pike, 4 miles.

861, Greenish crystalline slate rock. Carlisle pike, 3½ miles.

862, Greenish crystalline slate. 2¾ miles north-west of Petersburg, on Carlisle pike.

863, Greenish crystalline slate. 2½ miles north-west of Petersburg. Carlisle pike.
864, Micaceous ore. Mr. Hines' farm, 2¾ miles, ditto.
865, Orthofelsite. Carlisle pike, 2½ miles, ditto.
866, Trap. Missing. Carlisle pike, 2 miles, ditto.
867, Surface micaceous ore. Jno. Myer's farm, 2½ miles north of Petersburg.
868, Clay slate. Weathered from schist. Monosmith's farm, 2 miles south-east of Papertown.
869, Weathered crystalline schist. Mear's house, 4 miles north-west of Petersburg.
870, Green chloritic shale, with crystals of chloritoid. Near Idaville, 4 miles north-west of Petersburg.
871, Hydro-mica schist. Carlisle pike, 2 miles south-east of Papertown.
872, Chlorite slate. A. Meal's farm, 1½ miles east of Idaville.
873, Dolerite. Near Colson's house, 4 miles north of Petersburg, on New Oxford and Papertown road.
874, Limonite. Lear's limestone quarry, Carlisle pike, 2 miles north-west of Petersburg.
875, Variously colored limestone; also calcite. Lear's limestone quarry, 2 miles north-west of Petersburg.
876, Crystalline slate, green. 2½ miles north-west of Petersburg, Petersburg-Idaville road.
877, Greenish trap (?). Petersburg-Idaville road, 2 miles north-west of Petersburg.
878, Quartzose conglomerate. 2¼ miles north-west of Petersburg.
879, Calcareous rock. Menges' quarry, 3 miles north-west of Petersburg.
880, Ferruginous calcite from bed, hematite. Menges' limestone quarry, 3 miles north-west of Petersburg.
881, Quartzite or coarse sandstone. 2½ miles from Idaville, Idaville and Petersburg road.
882, Weathered orthofelsite slate. 2½ miles from Idaville. Idaville and Petersburg road.
883, Bluish crystalline slate rock. 2 miles from Idaville. Idaville and Petersburg road.

884, Orthofelsite, with seams of quartz. 6 miles north of Bendersville.

885, Orthofelsite. ½ mile north-east of Pine Grove, South Mountain.

886, Mesozoic conglomerate. ¾ of a mile south of Bendersville.

887, Weathered orthofelsite. Bendersville and Pine Grove road, 1 mile north-west of Bendersville.

888, Float ore. Near Thomas Iron Co.'s quarry. Pine Grove.

889, Sandy chlorite schist. 3 miles north-west of Bendersville, on Pine Grove road.

890, Decomposed trap. ½ mile south of Bendersville and Gettysburg road.

891, Dolerite. On Oxford road, 1 mile from Carlisle pike, Cumberland county.

892, Splintery chlorite schist. On right fork of N. Oxford road, ¾ mile south-east of John Peters.

893, Sandy chloritic argillite. Coarse-grained Mountain Creek rock. Near John Peters, ¾ mile south-east from his place.

894, Mica schist, with rose-colored quartz. Near county line, 4 miles north-west of Bendersville.

895, Chloritoid rock. ½ mile north-west ditto.

896, Mountain Creek rock. Near summit of first ridge, Bendersville and Pine Grove road.

897, Limestone (lower bench). Thomas Iron Co.'s limestone quarry, Pine Grove.

898, Very arenaceous slate. ½ mile north-west of Bendersville.

899, Finely laminated crypto-crystalline slate, blue and white streaks along bed plane. ¼ mile north-west of Bendersville.

900, Schistose conglomerate. 2 miles north-east of Pine Grove.

901, Impure limonite. Thomas Iron Co.'s bank on Bendersville and Pine Grove road, ¼ mile from Pine Grove.

902, Clay slate. Mt. Holly ore bank, Thomas Iron Co.

903, Schistose conglomerate, quartz and chlorite fragments. 3 miles north-east of Pine Grove, on road to Milltown.

904, Orthofelsite. ¾ of a mile north-west of Bendersville.

905, Talcose schist, with quartz pebbles. Summit of South mountain, 4 miles from Pine Grove, on Milltown road.

906, Limestone (upper bench). Thomas Iron Co.'s quarry, Pine Grove.

907, Chlorite, with seams of quartz. Last summit of South mountain, 4 miles from Pine Grove.

908, Hydro-mica slate, with pits of pyrite. ¼ mile from county line, near Jno. Peters'.

909, Green S. S., surrounded by lenticular foliæ, very thin and stained brown. 1 mile south-east of Papertown, under bank of Sth. Mt. R. R. Co.

910, Crypto-cryst. schists. At Colson's on Oxford road, 2 miles from Carlisle pike.

911, Orthofelsite porphyry. Oxford road, 1 mile from pike.

912, Orthofelsite porphyry. Oxford road, 3 miles from pike.

913, Impure testaceous limonite. Thomas Iron Co.'s bank, 1 mile south-east of Papertown.

914, Quartz, with chlorite schist coating. Oxford road, 3 miles from Papertown.

915, Orthofelsite porphyry. 2½ miles from Papertown, near pike, on the Oxford road.

916, Variegated, red, pink, yellow chlorite schist, thin laminæ. 2 miles north-east of Pine Grove.

917, Conglomerate quartz and calcite in chlorite. Daniel Peters' saw mill, 1 mile north-east of Bendersville.

918, Clay partings of felsitic mass. Old Whitestown bank, 2 miles south-east of Idaville.

919, Slaty orthofelsite porphyry. Cemetery on Petersburg and Bendersville road, 2½ miles north-east of Bendersville.

920, Dolerite. Bendersville road, ⅛ mile south of saw mill.

921, Impure limonite. Old Whitestown bank.

922, Sandstone, with seam of quartz. Bendersville road, 3 miles north-west of Bendersville.

923, Green S. S. inclosing fragments of calcite, felspar, etc., also a lenticular concretion. Near J. Weaver's, ½ mile north of Centre Mills.

924, Orthofelsite porphyritic and jaspery varieties. Virginia Mills road, 1 mile north of Millerstown road.

925, Limestone. Mt. Alto, Franklin county.

926, Hematite. 3 miles north of Mt. Alto furnace, near Pond bank.

927, Banded sandy slate. Near Cold Spring, 4 miles west of Millerstown.

928, Quartzose S. S., with specular ore. 3½ miles north of Mont Alto, Franklin county.

929, Ripple marks on new red sandstone. Near South mountain, 2½ miles north-east of Millerstown.

930, Impure ore. No. 5 shaft, ¾ of a mile north of Mt. Alto furnace.

931, White clay, underlying ore. Mine No. 3, ½ mile from Mt. Alto furnace, Franklin county.

932, White clay, underlying ore. No. 5 shaft, Mt. Alto furnace.

933, Iron ore sand. Near "Track road."

934, Blue limestone on crest of hill. Beeler's cross-roads, York county.

935, Dark limestone. Near top of Shunk's hill, Baltimore pike, York county.

936, Slate and micaceous ore. Strickhouser's.

937, Crystalline schists. ½ mile south of Wrightsville, York county.

938, Schistose limestone. Ziegler's.

939, Limestone. Near Beeler's cross-roads, where limestone merges into sandy slate.

940, Conglomerate limestone between unconformable blue and white beds. Hoke's quarry, ½ mile south of York, New Salem road.

941, Limestone. First quarry, New Salem road.

942, White limestone. Near Beeler's cross-roads (120 yards east).

943, Testaceous limonite, with associated schists and clay. (Missing.) Wilton's bank, ½ mile south-east of Wrightsville.

944, Calcareous slate, with associated flakes of schist. ⅛ mile north of Cline's run, York county.
945, Limestone conglomerate. Near Detweiler's quarry, in north part of Wrightsville.
946, Saponaceous clay. Wilton's bank, ½ mile south-east of Wrightsville.
947, Wm. Hoke's on Gettysburg pike, near York.
948, Sandy slate. Witmer's mill, on Yellow Breeches creek, Carlisle pike, Cumberland County.
949, Hard light blue dolomite, feebly effervescing, and hydro-mica schist. Spring Forge mill, cut on Short Line R. R., ¼ mile west of Spring Forge.
950, Sandy slate. Short Line R. R. cut, ½ mile, ditto.
951, Slate. (Missing.) Short Line R. R.
952, Limestone. Sprenkle's farm, ½ mile west of Mengis' mill, Short Line R. R.
953, Orthofelsite, with admixture of talcose schist. Cross-roads, 1 mile south-east of Idaville.
954, Orthofelsite porphyry. Road to Bendersville, 1 mile south-east of Idaville.
955, Orthofelsite. Near stone school-house, 2½ miles north-east of Bendersville.
956, Orthofelsite, with admixture of sand. 3 miles north-east of Bendersville.
957, Orthofelsite porphyry. Road to Carlisle road, 2 miles from Bendersville.
958, Sandy slate. 3 miles north-east of Bendersville.
959, Slaty orthofelsite. 2 miles north-west of Bendersville.
960, Orthofelsite containing magnetite. J. Wiskersham's, 2 miles north-west of Bendersville; miscalled ore.
961, Bluish white slaty orthofelsite. J. Wichersham's, 2 miles north-west of Bendersville.
962, Orthofelsite porphyry (weathered). Near Pine Grove road, ½ mile east of same, 3 miles N. W., ditto.
963, Orthofelsite. Same locality, ¼ mile east of State road to Pine Grove.
964, Orthofelsite. State road to Pine Grove, at county line.

965, Hydro-mica schist containing small bluish-colored quartz pebbles. Mountain Creek rock. State road to Pine Grove, near county line.

966, Light bluish limestone, with calcite. Lower bed in quarry, (Stuart's) Pine Grove, Cumberland county.

967, Bluish limestone with fluorite and calcite coating. Stuart's quarry, ¼ mile south-east of Pine Grove.

968, Limestone with fluorite and calcite. Stuart's quarries.

969, Limestone with aragonite. Stuart's quarries.

970, Limestone and crystallized calcite. Stuart's quarries.

971, Limonite. Thomas Iron Co.'s bank at Pine Grove.

972, Green crystalline schist. North-east end of Pine Grove.

973, Chlorite and orthofelsite. North-east of Pine Grove ¼ mile, on road to Milltown.

974, Orthofelsite porphyry, ditto.

975, Light gray chlorite schist. 1 mile north-east of Pine Grove, Cumberland County.

976, Chlorite schist, bluish and red tints, ditto.

977, Variegated chlorite schist, with chlorite, ditto.

978, Dull red colored argillite. 1 mile north-east of Pine Grove. Milltown road.

979, Chlorite schists. 1 mile north-east of Pine Grove.

980, Quartzose or conglomeritic schist. Mountain Creek rock. 1½ miles N. E. of Pine Grove.

981, Quartzose crystalline schist. Mountain Creek rock. 1½ miles north-east of Pine Grove.

982, Chlorite schist, inclosing seam of quartz. 3 miles north-east of Pine Grove. Milltown road.

983, Conglomerate schist. Mountain Creek rock. 2 miles north-east of Pine Grove. Milltown road.

984, Green crystalline schist, slightly conglomeratic. Mountain Creek rock. 3 miles, ditto.
Pine Grove.

985, Fissile quartzite. Mountain Creek rock, 3½ miles, ditto.

986, Dark blue limestone. On Yellow Breeches creek, ½ mile north-west of Bushtown, Cumberland Co., Cribb's farm.

987, Dark blue limestone. Same place.

988, Orthofelsite. 2 miles west of north of Bendersville, on State road to Pine Grove.
989, Chlorite schist. 2 miles west of north of Bendersville, Pine Grove road.
990, Orthofelsite porphyry. Ditto.
991, Same, bluish base, weathered. Same locality.
992, Variegated chlorite schists. Near school-house, 2 miles north-west of Bendersville.
993, Chlorite schist. At school-house, ditto.
994, Chlorite schist. School-house, ditto.
995, Orthofelsite porphyry. Near school-house, ditto.
996, Finely laminated orthofelsite. 3 miles north-west of Bendersville.
997, Compact orthofelsite. Ditto.
998, Slaty orthofelsite porphyry. 3¼ miles north-west of Bendersville.
999, Micaceous and magnetic ore. Mr. Wahley's farm, ¾ of a mile north-west of Bendersville.
1000, Orthofelsite porphyry. 3½ miles northwest of Bendersville.
1001, Orthofelsite porphyry. 3½ miles northwest of Bendersville, at Wahley's.
1002, Pseudomorphs of quartz after chlorite (?). 3½ miles north-west of Bendersville, at Wahley's.
1003, Epidotic rock. Same locality.
1004, Compact orthofelsite. 4 miles north-west of Bendersville.
1005, Orthofelsite porphyry. 4¼ ditto.
1006, Epidote rock (?). 4¼ miles ditto.
1007, Chlorite and quartz. 4½ miles ditto.
1008, Orthofelsite porphyry. 4½ miles ditto.
1009, Orthofelsite porphyry. 4¾ ditto.
1010, Slaty orthofelsite. 4¾ ditto.
1011, Orthofelsite porphyry. 4¾ ditto.
1012, Chlorite and quartz. 3½ miles north of Arendtsville.
1013, Chlorite schist. 4 miles N. W. of Arendtsville.
1014, Slaty orthofelsite. School-house and church, 1 mile east of Arendtsville, Shippensburg road.

1015, Pearly crystalline schist. ¼ of a mile west of schoolhouse and church.
1016, Slaty orthofelsite. ½ mile east of Arendtsville, Shippensburg road.
1017, Compact slaty orthofelsite. 2½ miles north of Arendtsville.
1018, Chlorite schist. 3½ miles north-west of Benderville, Shippensburg road.
1019, Quartzite. 1 mile north of Wrightsville.
1020, Sandy slate. 1 mile north of Wrightsville.
1021, Sandy slate. 1 mile north of Wrightsville.
1022, Sandy slate. 1 mile north of Wrightsville.
1023, Sandy slate. 1 mile north of Wrightsville.
1024, Quartzite with seams of quartz. ¾ of a mile north of Wrightsville.
1025, Sandy slate. ½ mile north of Wrightsville.
1026, Sandy slate. ¼ mile north of Wrightsville.
1027, Slate containing nodules of limestone. Ditto.
1028, Slaty limestone. One eighth mile ditto.
1029, Limestone conglomerate. Northern end of Wrightsville, Detweiler's quarry.
1030, White conglomerate limestone. 1/16 of a mile north of Wrightsville, Detweiler's quarry.
1031, Blue slaty limestone. Road at first quarry north of Wrightsville; from over tunnel connecting two quarries.
1032, Sandy slate. South end of Wrightsville, near Creitz creek.
1033, Sandy slate. ¼ of a mile south of Wrightsville.
1034, Sandy crystalline schist, with prints of pyrite crystals. ½ mile south of Wrightsville.
1035, Sandy slate. ¾ of a mile ditto.
1036, Slate. ¾ of a mile south of Wrightsville, H. Wilton's property.
1037, Quartz conglomerate. ¾ of a mile south of Wrightsville.
1038, Argillite. 1 mile south of Wrightsville, Wilton's run, at old cabin.

1039, Finely laminated argillite. 1 mile south of Wrightsville, Wilton's run, at old cabin.
1040, Quartz slate with prints of pyrite crystals. 1 mile south of Wrightsville.
1041, Hydro-mica (?) slate. 1⅛ miles ditto.
1042, Hydro-mica (?) slate. Slate quarry, 1¼ miles ditto.
1043, Hydro-mica (?) slate. 1½ miles ditto.
1044, Decomposed sandy schist. 2 miles ditto.
1045, Decomposed sandy schist. 2¼ miles ditto.
1046, Argillite. 2½ miles ditto.
1047, Blue limestone. 2½ miles ditto.
1048, Crystalline schist. Opposite timber-yard at Creitz creek, south end of Wrightsville.
1049, Bluish dolomite (?).
1050, Dolomite. Opposite mouth of Creitz creek.
1051, Crypto cryst. schist. ¼ mile south of Wrightsville, at canal lock.
1052, Calc. slate (?) with seam of calcite. 1 mile ditto.
1053, Slaty limestone. Near Wilton's quarry, south of Wrightsville.
1054, Conglomerate limestone. Quarry, north-west end of Wrightsville.
1055, Orthofelsite. ¼ mile north of road to Lerew's store.
1056, Variegated chlorite schist. 3½ miles south-east of Boiling Springs, Cumberland county.
1057, Slaty orthofelsite. ⅛ mile from cross-roads to Lerew's store.
1058, Quartz conglomerate. 4 miles from Boiling Springs, Cumberland county.
1059, Variegated chlorite schist. 3½ miles south-east of Boiling Springs.
1060, Asbestus, quartz, and specular iron ore. 4½ miles north of Petersburg.
1061, Crystalline schist stained with iron. 4 miles south-east of Boiling Springs.
1062, Jaspery orthofelsite. 3 miles north of Petersburg.
1063, Weathered chlorite slate with quartz. 4 miles north-east of Mt. Holly Springs.

1064, Mountain creek rock. 3 miles south-east of Boiling Springs.
1065, Sandy clay slate. 4½ miles north of Petersburg.
1066, White quartzite. 3 miles south-east of Boiling Springs.
1067, Sandstone containing layers of schist. 2½ miles south-east of Boiling Springs.
1068, Quartz. 4miles north of Petersburg.
1069, Hydro-mica conglomerate. Mountain Creek rock. 2½ miles south-east of Boiling Springs.
1070, Steatite. Peach Bottom.
1071, Red quartzite. 2 miles north-east of Mummasburg.
1072, Argillaceous sandstone. 1 mile south of Arendtsville.
1073, Quartzite. North-west end of Arendtsville.
1074, Orthofelsite. 1 mile north-west of Arendtsville.
1075, Weathered orthofelsite slate. ½ mile ditto.
1076, Slaty orthofelsite. ¼ mile ditto.
1077, Slaty orthofelsite. 1¾ miles ditto.
1078, Jaspery orthofelsite. 1¾ ditto.
1079, Clay slate. 3½ miles ditto.
1080, Orthofelsite. 3½ miles ditto.
1081, Orthofelsite, with vein of epidote. ¼ mile north-west of Stewart's. Shippensburg road.
1082, Orthofelsite slate. 1mile north-west of Stewart's. Shippensburg road.
1083, Schist containing quartz pebbles. Mountain Creek rock. ½ mile north-west of school-house, near Stewart's.
1084, Coarse schist conglomerate. Mountain Creek rock. Near school-house, ½ mile beyond Stewart's, Shippensburg road.
1085, Schist intersected by quartz veins. ½ mile north-west of same school-house.
1086, Schist with quartz fragments. Mountain Creek rock. Summit of Piney Hill. Shippensburg road.
1087, Schist with quartz pebbles. Mountain Creek rock. ¼ mile north-west of summit of Piney Hill.
1088, Hydro-mica schist. Near Beamer's private road on Shippensburg road.

1089, Hydro-mica slate, with amethyst fragments. Mountain Creek rock. 2 miles north-west of Stewart's, Shippensburg road.
1090, Argillite. Near Beamer's mill.
1091, Hydro-mica and pebbles. Mountain Creek rock. Near Summit mountain, north-west of Beamer's.
1092, Laminated quartz conglomerate. Near Summit mountain, north-west of Beamer's.
1093, Blue mud-rock. 2 miles south-east of Gettysburg, Baltimore pike.
1094, Bluish sandstone, with epidote. 2 miles south-east of Gettysburg, Baltimore pike.
1095, Reddish sandstone. 2¼ miles south-east of Gettysburg, Baltimore pike.
1096, Laminated red sandstone. 2¼ miles south-east of Gettysburg, Baltimore pike.
1097, Argillaceous red sandstone. 3 miles south-east of Gettysburg, Baltimore pike.
1098, Orthofelsite. 3 miles north-west of Arendtsville.
1099, Sandy Chlorite schist. 3¾ miles west by north of Arendtsville.
1100, Finely laminated orthofelsite. (Missing.) ½ mile north-west of Cole's saw-mill, Shippensburg road.
1101, Decomposed schist. 4 miles west by north of Arendtsville.
1102, Decomposed orthofelsite. 4 miles ditto.
1103, Slaty orthofelsite. 4¼ miles north-west of Arendtsville.
1104, Felsitic slates. 4½ miles ditto.
1105, Green chlorite schist. 4½ miles west by north of Arendtsville.
1106, Felsitic slates. 4½ miles ditto.
1107, Slaty orthofelsite. 4½ miles ditto.
1108, "Jasper" (compact orthofelsite). (Missing.) ¼ mile east by south of Stewart's, on Shippensburg road.
1109, Orthofelsite porphyry. ¼ mile ditto.
1110, Epidote rock (?). ⅛ mile ditto.
1111, Slaty orthofelsite. 5 miles west by north of Arendtsville.

1112, Trap (?). 5⅛ miles ditto.
1113, Conglomerate Schist, quartz pebbles, amethyst color. Mountain Creek rock. ½ mile beyond Stewart's. Shippensburg road.
1114, Hydro-mica schist. Mountain Creek rock. Ditto. mile beyond Stewart's. Shippensburg road.
1115, Purplish quartzose schist. ¾ of a mile beyond Stewart's. Shippensburg road.
1116, Conglomerate schist, coarse, quartz pebbles. ¾ of a mile beyond Stewart's.
1117, Quartzite. 1½ miles beyond Stewart's.
1118, Argillite. 2⅛ miles beyond Stewart's. Shippensburg road.
1119, Sandy hydro-mica schist. ¼ mile beyond Beamers. Shippensburg road.
1120, Greenish schist, with amethyst-colored pebbles. ¾ of a mile beyond Beamer's.
1121, Red quartzose schist. 1 mile east of county line. Shippensburg road.
1122, Quartzite. 1 mile east of county line, ditto.
1123, Honey-combed clay slate. Stewart's farm, on Shippensburg road.
1124, Purplish quartzose schist. Summit of Piney Hill.
1125, Hydro-mica schist. Summit of Piney Hill, near Cole's saw and stave-mill.
1126, Orthofelsite porphyry. Near Cole's mill.
1127, Epidote rock. Piney Hill, near Cole's mill.
1128, Trap. 4 miles south of Gettysburg. Emmittsburg road.
1129, Weathered orthofelsite porphyry. 5 miles south of Gettysburg. Emmittsburg road.
1130, Jaspery orthofelsite (?). 5 miles south of Gettysburg. Emmittsburg road.
1131, Trap. 4¾ miles, ditto.
1132, Trap. 4¾ miles, ditto.
1133, Orthofelsite. 4½ miles, ditto.
1134, Fine-grained trap. 4 miles, ditto.
1135, Rounded pebble of trap. 4½ miles, ditto.

1136, Mud-rock resembling orthofelsite. Willoughby Run bridge.
1137, Trap of alteration (?). Middle Creek bridge.
1138, Ferriferous trap. 2 miles north of Emmittsburg.
1139, Trap. 2 miles north of Emmittsburg.
1140, Altered orthofelsite porphyry (?). 2 miles north-east of Emmittsburg.
1141, Decayed trap. 2 miles north-east of Emmittsburg.
1142, Compact argillaceous gray sandstone. 2 miles north-east of Emmittsburg.
1143, Micaceous ore in sandy shale. G. Krise's farm, 2½ miles from Emmittsburg.
1144, Calcite, pyrite, chalcopyrite and micaceous ore. G. Krise's farm, 2½ miles from Emmittsburg.
1145, Shale, with coating of micaceous ore and pyrite. G. Krise's farm, 2½ miles from Emmittsburg.
1146, Banded shale. G. Krise's farm, 2½ miles, ditto.
1147, Occurrence of micaceous ore. G. Krise's farm.
1148, Orthofelsite porphyry, with greenish base. Cole's saw and stave-mill, 3 miles N. of Chambersburg pike.
1149, Slaty orthofelsite. Newman's, Chambersburg pike.
1150, Schistose conglomerate, amethyst pebbles. Mountain Creek rock. Mountain side north-west of Newman's.
1151, Orthofelsite. At Newman's, 1¼ miles north of Chambersburg pike.
1152, Talc. (?) schist. 2 miles north of same.
1153, Epidote (?) rock. 2 miles north of same.
1154, Crystalline epidote rock (?). 2½ miles north of Newman's.
1155, Greenish schist. 3 miles north of Newman's.
1156, Conglomeratic schist. Mountain Creek rock. 1¼ miles south of west of burned saw-mill on Conococheague.
1157, Quartzite. 1½ miles south of west of burned saw-mill on Conococheague.
1158, Quartzose schist. Mountain Creek rock. 3½ miles north of Caledonia Furnace, Birch creek.
1159, Very quartzose schist. 3½ miles north of Caledonia Furnace, Birch creek.

1160, Quartzite. 3 miles north of Caledonia Furnace.
1161, Greenish sandstone. 3 miles west of Gettysburg. Chambersburg pike.
1162, Sandy blue shale. 3½ miles west of Gettysburg. Chambersburg pike.
1163, Red shale. 4 miles west of Gettysburg. Chambersburg pike.
1164, Quartzite. Junction of Birch and Conococheague creeks, 3 miles north of Caledonia Furnace.
1165, Orthofelsite. ¼ mile south-east of Caledonia Furnace.
1166, Quartz conglomerate polished on one surface. ½ mile east of Græffenburg, on pike.
1167, Laminated orthofelsite. ¼ mile south-east of Caledonia Furnace.
1168, Fine-grained compact orthofelsite, (not porphyritic.) ¼ mile south-east of Caledonia Furnace.
1169, Fine-grained compact orthofelsite, (not porphyritic.) 1½ miles south-east of Caledonia furnace.
1170, Fine-grained compact orthofelsite (slaty.) 3½ miles south-east of Caledonia Furnace.
1171, Weathered orthofelsite (porphoritic.) 3½ miles south-east of Caledonia Furnace.
1172, Weathered orthofelsite (porphyritic.) (Missing.) 3¾ miles south-east of Caledonia Furnace.
1173, Orthofelsite with epidote (?). On road from pike at furnace, ¼ mile north of Mont Alto. Fairfield road near Baker's.
1174, Red and white banded quartzite. ¼ mile north-east of Caledonia Springs.
1175, Weathered quartzite, interstreaked red and white. 1 mile north-east of Caledonia Springs.
1176, Laminated quartzite, with specks of micaceous ore. 1 mile north-east of Caledonia Springs.
1177, Sandy slate. 2½ miles north-east of, ditto. Springs.
1178, Orthofelsite. 3 miles north-east of Caledonia Springs.
1179, Blue and white orthofelsite, (porphyritic.) Road to Chambersburg pike from Caledonia Springs.

1180, Conglomerate schist. Mountain Creek rock. Summit Notch, 2 miles north-east of Reamer's tavern.
1181, Conglomerate schist. Mountain Creek rock. Summit Notch, 2 miles north-east of Reamer's tavern.
1182, Pink quartzite. Three miles north-east of Caledonia Furnace.
1183, Schistose conglomerate. Mountain Creek rock. Three and one-fourth miles north-east of Caledonia Furnace.
1184, Finely laminated felsite mass, with quartz pebbles. Two and a half miles north-east of same.
1185, Orthofelsite with irregular cleavage. One mile southwest of Newmans. Road to Newman's from Caledonia Springs.
1186, Weathered Orthofelsite. One half mile from Caledonia Springs.
1187, Weathered orthofelsite porphyry, light pink tinge. At "Summit," on Chambersburg pike.
1188, Talcose schist, weathered. Newman's. Pike.
1189, Laminated talcose orthofelsite. Newman's. Pike.
1190, Green sandy schist. Near Newman's.
1191, Gray quartzite. Chambersburg pike, 14 miles west of Gettysburg.
1192, Hydro-mica slate. Two and a half miles north-east of Newman's.
1193, Specular ore in orthofelsite. Cole's farm, 1 mile north-east of Newman's.
1194, Specular ore in orthofelsite. Cole's farm.
1195, Slaty orthofelsite porphyry. 100 feet north of west of Sheppard's house, and 1 mile N. E. of Newman's.
1196, Finely laminated porphyritic orthofelsite. $\frac{3}{4}$ of a mile west of Newman's, on Chambersburg pike.
1197, Schistose conglomerate. Mountain creek rock. 1 mile west of Newman's. Chambersburg pike.
1198, Orthofelsite porphyry. $1\frac{1}{4}$ miles east of Græffenberg, on pike.
1199, Quartzose schist (?). Mountain Creek rock. Græffenburg Springs, $10\frac{1}{2}$ miles west of Gettysburg.
1200, Quartzite. Caledonia village, 1 mile west of Græffenburg.

1201, Orthofelsite porphyry. $1\frac{1}{4}$ miles east of Græffenburg. South of saw mill on pike.
1202, Orthofelsite. $\frac{1}{2}$ mile east of south of pike, on road to charcoal pits near Caledonia Springs road.
1203, Weathered orthofelsite, partly porphyritic. $1\frac{1}{2}$ miles south of saw mill, $1\frac{1}{4}$ miles east of Græffenburg.
1204, Orthofelsite. $\frac{3}{4}$ of a mile east of Græffenburg.
1205, Sandy green epidote (?) rock. $\frac{3}{8}$ of a mile east of Græffenburg.
1206, Limonite. 2 miles north-west of Greenwood. Road to Scotland.
1207, Float ore (limonite.) S. Wolf's farm, 2 miles north-west of Greenwood.
1208, Impure limonite. S. Wolf's farm, ditto.
1209, Limonite. Rawfen' s farm, 2 miles north-west of Greenwood.
1210, Quartzite. $2\frac{1}{2}$ miles north-west of Greenwood.
1211, Quartzite sandstone and conglomerate. 3 miles north-west of Greenwood.
1212, Pulverulent sandstone. 3 miles N. W of Greenwood.
1213, Quartzose sandstone, with *Scolithus*. Caledonia village, 1 mile east of Greenwood.
1214, Quartzite. $3\frac{1}{2}$ miles north-west of Greenwood.
1215, Quartzose sandstone, with *Scolithus*. 4 miles north-west of Greenwood.
1216, Quartzite, with spangles of micaceous iron. $\frac{3}{4}$ of a mile north-east of Tain's mill. Cold Spring road.
1217, Quartzite. 4 miles north of Fayetteville.
1218, Limonite. M. Good's farm, $1\frac{1}{2}$ miles ditto.
1219, Limonite. M. Good's farm, shaft, $1\frac{1}{2}$ miles ditto.
1220, Limonite, with red ochre. M. Good's farm, $1\frac{1}{2}$ miles north of Fayetteville, ore bank.
1221, Fibrous limonite. M. Good's farm, ditto.
1222, Mammillary hematite. "English bank," 2 miles south-east of Greenwood.
1223, Brown and pink quartzite. $1\frac{1}{2}$ miles north-east of Kean's saw-mill.
1224, Quartzite. Cold Spring road, 1 mile south-east of Greenwood.

1225, Quartz conglomerate. Cold Spring road, ditto.
1226, Impure limonite. Pond bank, 2 miles ditto.
1227, Quartz conglomerate, cemented by iron oxide. Pond bank, 2 miles south-east of Greenwood.
1228, Limonite ore. "English bank," 2 miles ditto.
1229, Concretionary hematite and red ochre. Caledonia bank, 2 miles south-east of Greenwood.
1230, Bluish limestone. 2 miles south-east of Greenwood, near Pond bank.
1231, Limestone. 2 miles south-east of Greenwood, near Pond bank.
1232, Quartzose sandstone. 2 miles south-east of Greenwood, near Pond bank.
1233, Red sandy shale. 4 miles from Gettysburg. Baltimore pike.
1234, Fine-grained yellowish-green sandstone. 4 miles south of Gettysburg. Baltimore pike.
1235, Laminated yellowish-green shale. $4\frac{1}{2}$ miles ditto.
1236, Laminated greenish sandy shale. $4\frac{3}{4}$ miles ditto.
1237, Laminated greenish sandy shale. $4\frac{3}{4}$ miles ditto.
1238, Red sandstone. $4\frac{3}{4}$ miles south of Gettysburg. Ditto.
1239, Purplish-gray sandstone. $4\frac{7}{8}$ miles south of Gettysburg. Baltimore pike.
1240, Fine-grained argillaceous sandstone, reddish. $\frac{1}{2}$ mile south of Two Taverns. Baltimore pike.
1241, Red shale. $\frac{1}{4}$ mile west of New Salem. Chambersburg pike.
1242, Bluish compact orthofelsite. $11\frac{3}{4}$ miles west of Gettysburg. Chambersburg pike.
1243, Orthofelsite containing epidote (?). $11\frac{3}{4}$ miles west of Gettysburg. Chambersburg pike.
1244, Laminated orthofelsite porphyry. $\frac{1}{2}$ mile west of Willow Grove tavern. Chambersburg pike.
1245, Varieties of epidote rock. Willow Grove. Chambersburg pike.
1246, Light green orthofelsite porphyry. $9\frac{1}{2}$ miles west of Gettysburg. Chambersburg pike.
1247, Slaty orthofelsite. $\frac{1}{2}$ mile west of Cashtown.

1248, Quartzose greenish cryst. schist with quartz. ½ mile west of Cashtown. Crest of mountain.
1249, Sandstone with mica. ½ mile west of Cashtown. Crest of mountain.
1250, Chlorite schist with amethyst pebbles. Mountain Creek rock. Hanzelman's hotel, Cashtown.
1251, Quartzite. Crest of mountain, opposite Pond bank. "White Rocks."
1252, Quartz conglomerate. 3 miles northeast of Funkstown.
1253, Chlorite schist with pebbles of amethyst color. Hanzelman's hotel, Cashtown.
1254, Impure limonite. 3 miles north-east of Funkstown. Mountain road from Greenwood.
1255, Translucent slaty quartzite. 3 m. N. of Mont Alto.
1256, Milk-white quartzite, of peculiar texture and fracture. 2 miles north of Mont Alto.
1257, Quartz conglomerate. 1 mile north of Mont Alto Furnace.
1258, Chert. Bank No. 1, 1 mile north of Mont Alto.
1259, Concentric layers of limonite and clay. Bank No. 1.
1260, Trap (?). 1¼ miles north of furnace.
1261, Buff-colored dolomitic conglomerate. 1 mile ditto.
1262, Purplish slaty orthofelsite. 1½ miles south-east of Mt. Alto Furnace.
1263, Quartzite with *Scolithus* (?). ½ mile east of furnace.
1264, Quartzite. "Narrows," 1 mile east of ditto.
1265, Greenstone (diabase ?). 2¼ miles east of ditto.
1266, Orthofelsite porphyry. 2 miles east of ditto.
1267, Dolerite. Summit Ridge east of narrows, 2¼ miles east of furnace.
1268, Fine-grained rock, melaphyre (?). 3 miles ditto.
1269, Compact green rock, melaphyre (?). 3 miles ditto.
1270, Conglomerate, with amethyst fragments. Mountain Creek rock. ¼ mile east of Mont Alto office. Fairfield road.
1271, Greenstone (?). 2 miles east of Mont Alto office.
1272, Quartzite containing crystals of iron pyrites. ½ mile east of south of Caledonia Springs. Fairfield road.

1273, Conglomeratic schist, with amethyst pebbles. Mountain Creek rock. East side of crest of Green Ridge, 1 mile south-east of the springs.
1274, Lead-colored crystalline schist. East side of crest of Green Ridge, 1 mile south-east of the springs.
1275, Green sandy slate, epidote (?). Baker's, 1 mile west of Caledonia Springs.
1276, Quartzite. Caledonia Springs.
1277, Argillite. 1¼ miles south-east of Caledonia Springs.
1278, Conglomerate of quartz pebbles. Mountain Creek rock. 1½ miles east of Caledonia springs.
1279, Epidote rock. 1½ miles east of Caledonia springs.
1280, Clay slate. Mountain Creek rock. ¼ mile west of Bingham's. Fairfield road.
1281, Conglomerate schist. ¾ of a mile west of Bingham's.
1282, Orthofelsite porphyry. 2¼ miles east of Caledonia Springs.
1283, Hydro-mica schist. 2¼ miles east of ditto.
1284, Compact felsite rock, with jasper-like fracture. 3 miles east of south of Caledonia Springs.
1285, Fibrous quartz in epidote rock. Baker's house, 2½ miles east of Caledonia springs.
1286, Orthofelsite porphyry. 3 miles east of ditto.
1287, Bluish granular limestone. 1½ miles N. of Fairfield.
1288, Epidote rock. 3 miles east of Caledonia Springs.
1289, Epidote rock. 3 miles east of Caledonia Springs.
1290, Epidote rock. 3¼ miles east of Caledonia Springs.
1291, Epidote rock. 4 miles east of Caledonia Springs.
1292, Argillite. 3¼ miles east of springs.
1293, Coarse-grained trap. ½ mile west of Gettysburg. Fairfield road.
1294, Trap. 6 miles west of Gettysburg, and 1½ miles east of north of Fairfield.
1295, Magnetic sand. 2 miles east of north of Fairfield. Gettysburg road.
1296, Trap. Seminary Ridge, (railroad cut,) Gettysburg.
1297, Trap. School House Ridge, 2¼ miles west of Gettysburg. Chambersburg pike.

1298, Argillaceous sandstone, charged with epidote. 3¼ miles west of Gettysburg. Chambersburg pike.
1299, Compact greenish sandstone. 3½ miles west of Gettysburg. Chambersburg pike.
1300, Calcareous conglomerate. 1¼ miles north-west of New Salem. Road to Minter mine.
1301, Impure iron ore. Fields of Mr. Comfort.
1302, Magnetic ore. Shaft at Comfort's.
1303, Varieties of rock occurring in Minter mine. Dump heap.
1304, Fine-grained argillaceous sandstone. 1¼ miles east of Two Taverns. Baltimore pike.
1305, Yellowish-green sandstone. 2½ miles north of Littlestown.
1306, Coarse-grained yellowish-green conglomerate. 2 miles north of Littlestown.
1307, Red shale with spangles (mica?). 1 mile north of Littlestown.
1308, Compact green sandstone. School House Ridge, 2¼ miles west of Gettysburg. Chambersburg pike.
1309, Dark sandy limestone slate. 1½ miles north-east of York.
1310, Ore (slightly magnetic). Jesse Group, Huntingdon township, Adams county.
1311, Magnetic wash ore. Z. Louck's ore bank, near York.
1312, Calcareous slates and limestone. Lock, Susquehanna river, below Wrightsville.
1313, Phlange of pig. Wister's Furnace, Harrisburg.
1314, Pig. Wister's Furnace, Harrisburg.
1315, Bessemer Pig. Wister's Furnace, Harrisburg.
1316, Ironton paint. Kautz's farm, 2 miles north-west of Dillsburg.
1317, Compact chlorite slate. Baer's farm, Adams county, (1874).
1318, Quartz in ferruginous clay. Baer's farm.
1319, Chlorite with pyrite. Baer's farm.
1320, Clay slate. Baer's farm.
1321, Chlorite slate stained with pyrites. Baer'sfarm.
1322, Pyrites in chlorite slate. Baer's farm.

1323, Clay slate. Kunkel's farm, 1 mile south-east of Littlestown.
1324, White feldspathic trap. Taneytown road, 1½ miles south of Gettysburg.
1325, Ribbed trap. Summit Granite Spur, 3½ miles ditto.
1326, Specular iron in quartz. Chickies Rock, at Columbia.
1327, Sandstone. Near Wrightsville.
1328, Argillite. Near Wrightsville.
1329, Hydro-mica slate. Near Wrightsville.
1330, Fine-grained chlorite slate. Near Wrightsville.
1331, Compact chlorite slate with pits of pyrite. Second stop-lock south of Wrightsville.
1332, Sandy slate. 2 miles north of Wrightsville.
1333, Sandy slate.
1334, Hydro-mica slate. Bull's Run, south of Wrightsville.
1335, Quartzite. Sharp bend in road opposite Chickies.
1336, Sandy crystalline limestone. Junction of limestone and sandstone, north of Wrightsville.
1337, Compact crystalline slate. Near Wrightsville.
1338, Hydro-mica slate. Near Wrightsville.
1339, Argillaceous slate. Near Wrightsville.
1340, Calcareous sandy slate. Canal lock, below Wrightsville.
1341, Calcareous slate. Detweiler's quarry, 4½ miles south of Wrightsville.
1342, Dolomitic conglomerate. West bank of Creitz creek, 200 yards from bridge.
1343, Sandy crystalline slates. Lock house.
1344, Coarse-grained trap. Near Fairfield. 1½ miles east of north of Fairfield.
1345, Trap. 3 m. N. of Rossville, on old road to Dillsburg.
1346, Fine-grained sandstone. 3 miles north of Rossville, on old road to Dillsburg.
1347, Trap. 3¼ miles north of Rossville, on ditto.
1348, Trap. 3½ miles north of Rossville, on ditto.
1349, Trap. 4 miles north of Rossville, on ditto.
1350, Trap. 4 miles north of Rossville, on ditto.
1351, Trap. 3½ miles south-east of Dillsburg, on old road to York.

1352, Trap. 3¼ miles south of east of Dillsburg, on ditto.
1353, Grayish sandstone. 3¼ miles east of Dillsburg.
1354, Trap. 2½ miles east of Dillsburg.
1355, Greenish sandstone. 2½ miles east of Dillsburg, opposite Price's bank.
1356, Greenish sandstone. 2½ miles east of Dillsburg, opposite Price's bank.
1357, Greenish sandstone. Pit near south-west end of McCormick's long cut, 1 mile east of Dillsburg.
1358, Trap. King's mine, 2 miles east of Dillsburg.
1359, Sandstone. King's mine, 2 miles east of Dillsburg, (top and bottom rock).
1360, Trap. Foot of slope, King's mine.
1361, Limonite. Williams' bank, 2½ miles south-west of Dillsburg.
1362, Trap. Near Underwood's mine. In field south of new opening.
1363, Greenish sandstone. Near Underwood's mine. In field south of new opening.
1364, Magnetic ore. King's mine, 2 miles east of Dillsburg.

1365 TO 1529—F. PLATT—1874.

Calciferous.

1365, (165,) Semi-crystalline dolomite. Station 6+3060′; on the crest of the great Nittany Valley anticlinal, east of Bellefonte, in Centre county, Pa.

Between anticlinal and Bellefonte bridge.

1366, (164,) Dark drab-colored dolomite. Station 6+2392′.
1367, (163,) Compact, drab dolomite. Station 6+1933′.
1368, (162,) Compact, drab-colored dolomite. 6+1800′.
1369, (161,) Semi-crystalline dolomite. Station 6+1776′.
1370, (160,) Drab-colored dolomite. Station 6+1649′.
1371, (159,) Drab-colored dolomite. Station 6+1625′.
1372, (158,) Semi-crystalline dolomitic limestone. 6+1459′.
1373, (157,) Semi-crystalline dolomite. fossiliferous. Station 6+1405′. (Quarry.)
1374, (156,) Drab-colored dolomite. Station 6+944′.
1375, (155,) Drab-colored dolomite. Station 6+910′.
1376, (154,) Light drab-colored dolomite. Station 6+893′.
1377, (153,) Drab-colored dolomite. Station 6+858′.
1378, (152,) Semi-crystalline limestone. fossiliferous. Station 6+829′.
1379, (151,) Semi-crystalline drab-colored dolomite fossiliferous. Station 6+690′.
1380, (150,) Compact, semi-crystalllne dolomite. 6+648′.
1381, (149,) Drab-colored dolomite. Station 6+624′.
1382, (148,) Drab-colored dolomite. Station 6+475′.
1383, (147,) Semi-crystalline dolomite. Station 6+463′.
1384, (146,) Drab-colored dolomite. cavities filled with dolomite crystals. Station 6+320′.
1385, (145,) Drab-colored, semi-crystalline dolomitic limestone. Station 6+260′.
1386, (144.) Station 6+155′.
1387, (143.) Station 6+130′.
1388, (142.) Station 6+90′.

1389, (141,) Drab-colored dolomite. Station 1+320′.
1390, (140.) Gray dolomite.
1391, (139.) Station 1+42′.
1392, (138,) Gray limestone. Station No. 1 at bridge over Spring Creek, above Bush-House, Bellefonte.

From the bridge at Bell's fording westward, along the Railroad, through the Gap, and to the summit of the Allegheny Mountain.

Lower Dolomites of No II.

1393, (1,) Drab-colored dolomite.
1394, (2,) Drab-colored dolomite. 110′ west of Station No. 1.
1395, (3,) Compact drab-colored dolomite. Ditto.
1396, (4,) Dark gray limestone. 115′ west of Station No. 1.
1397, (5,) Dark drab-colored limestone. 120′.
1398, (6,) Drab-colored dolomite. 125′.
1399, (7,) Gray limestone. with veins of calcite. 160′.
1400, (8,) Drab-colored dolomite. 160′.
1401, (9,) Drab-colored dolomite. 241′.
1402, (10,) Drab-colored dolomite. 347′.
1403, (11,) Gray semi-crystalline dolomitic limestone. 370′.
1404, (12,) Dolomitic limestone. 540′.
1405, (13,) Drab-colored dolomite. 670′.
1406, (14,) Gray semiery-stalline dolomite. 705′.
1407, (15,) Dark drab-colored dolomite. 745′.
1408, (16.) Dolomite. 790′ west of Station No. 1.
1409, (17,) Drab-colored dolomite. 960′.
1410, (18,) Dark drab-colored dolomite. 1223′ (Stat. 98.)
1411, (19,) Semi-crystalline limestone. 100′ north from 98.
1412, (20,) Dark drab-colored dolomite. 120′+98.
1413, (21,) Drab-colored dolomite. 120′+98.
1414, (22,) Carbonaceous limeshale. 220′+98 (St. 99.)
1415, (23,) Dark-colored dolomite. 125′ beyond Station 99.
1416, (24,) Drab-colored dolomite. 125′ beyond Station 99.
1417, (25,) Drab-colored dolomite. 340′ beyond Station 99.
1418, (26,) Drab-colored dolomite. 603′ above Station 99.
1419, (27,) Light drab-colored dolomite. 99+400′.
1420, (28,) Compact drab-colored dolomite. 99+410′.

1421, (29,) Shaly drab-colored dolomitic limestone. Between 27 and 28.
1422, (30,) Light drab-colored dolomite. Station 99+457′.
1423, (31,) Dark gray limestone. Station 100+83′. (Sta. 100=Sta. 99+524′.
1424, (32,) Drab-colored dolomite. Station 100+480′.
1425, (33,) Argillaceous limestone with fossils 100+705′.
1426, (34.) Station 100+705′.
1427, (35.) Station 100+727′.
1428, (36.) Station 100+875′.
1429, (37.) Station 100+888′.
1430, (38,) Drab-colored limestone. Station 100+940′.
1431, (39,) Drab-colored clay. Station 100+950′.
1432, (40,) Dark drab-colored semi-crystalline limestone. Station 100+985′. (Shortledge's quarry.)
1433, (41,) Dark drab-colored limestone. Station 100+1015′.
1434, (42,) Semi-crystalline limestone. 100+1015′ to 1060′.
1435, (43,) Drab-colored dolomite. Station 100+1060′.
1436, (44,) Gray semi-crystalline dolomitic lime. 100+1065′.
1437, (45,) Dark dolomitic L. fossiliferous. 100+1080′.
1438, (46,) Gray limestone, fossiliferous. 100+1100′.
1439, (47,) Semi-crystalline limestone. Station 100+1120′.
1440, (48,) Argillaceous L., fossiliferous. 100+1130′.
1441, (49,) Dark gray compact dolomitic L. 100+1200′.
1442, (50.) Station 100+1230′.
1443, (51,) Shaly argillaceous L., fossiliferous. 100+1235′.
1444, (52.) Station 100+1405′.

Trenton Limestone.

1445, (53,) Argillaceous lime shale. Station 100+1430′.
1446, (54.) Station 100+1500′.
1447, (55,) Shaly argillaceous L., fossiliferous. 100+1540′.
1448, (56,) Argillaceous L., fossiliferous. 100+1550′.
1449, (57,) Station 100+1560′.
1450, (58,) Drab-colored limestone. Station 100+1585′.
1451, (59,) Dark gray argillaceous L., fossils. 100+1600′.

1365—1529 Dolomites and Limestones. Analyses of these, collected by Mr. Platt, have not been made, and there may be some error in the above description. C. E. H.

1452, (60,) Gray argillaceous L., fossiliferous. 100+1610′.
1453, (61,) Argillaceous L. stone, fossiliferous. 100+1630′.
1454, (62,) Argillaceous L. stone, fossiliferous. 100+1690′.
1455, (63,) Semi-crystalline limestone. Station 100+1700′.
1456, (64,) Argillaceous L. stone, fossiliferous. 100+1710′.
1457, (65,) Argillaceous L., fossils. 100+1710′ to 1770′.
1458, (66,) Argillaceous L. stone, fossiliferous. 100+1770′.
1459, (67,) Compact argillaceous limestone. 100+1805′.
1460, (68,) Station 100+2000′.
1461, (69,) Argillaceous limestone, fossiliferous. 100+2020′.
1462, (70,) Station 100+2073′.
1463, (71,) Station 100+2200′ (100+2250′=*Sta. 104.*)
1464, (72.) Station 104+46′.

Medina Sandstone.

1465, (73,) Gray sandstone. 108+(233′ IV)+574′ spec. 73.
1465a, (73½,) Olive shale. Station 108+564′
1466, (74,) Red sandstone. Station 108+991′.
1467, (75,) Olive sandstone. Station 108+1020′.
1468, (76,) Olive sandstone iron-stained. Station 108+1040′ : +1150′=Sta. 110.

Clinton Group.

1469, (77,) Olive and red shale. Station 110+82′.
1470, (78,) Red ferruginous shale. Station 110+98′.
1471, (79,) Olive sandstone. Station 110+108′.
1472, (80,) Red sandstone. Station 110+110′.
1473, (81,) Gray sandstone. Station 110+699′.
1474, (82,) Olive shale. Station 112+448′. (Sta. 110+990′ =*Sta. 112.*)
1475, (83.) Limestone. Alexander's quarry—near.
1476, (84.) Stelactite. Alexander's quarry—opposite.
1477, (85.) Limestone. Alexander's quarry—opposite.
1478, (86,) Ferruginous sandstone. Ditto.

Lower Helderberg Limestone.

1479, (87,) Limestone fossilferous. Bottom of limestone; Bellefonte and Snowshoe R. R.

Oriskany Sandstone.

1480, (88,) Gray sandstone. *Bellefonte and Snowshoe* RR.
1481, (89,) Calcareous sandstone, fossiliferous.

Lower Helderberg Limestone.

1482, (90,) Gray limestone.
1483, (91,) Shaly argillaceous limestone. Stat. 90+20′.
1484, (92,) Lime shale. Spec. 91+40′; B. & S. S. R. R.
1485, (93,) Limestone, with bands of calcite. Overlying 89.

Oriskany Sandstone.

1486, (94,) Gray sandstone. Bellefonte and Snowshoe R. R.
1487, (95,) White and gray sandstone, fossiliferous. R. R., near intersection.

Above Oriskany.

1488, (96.) Sandstone. R. R., near intersection.
1489, (97.) Sandstone. R. R., near intersection cuts.
1490, (98,) Olive sandstone. R. R., near intersection.
1491, (99,) Olive shaly sandstone. R. R.
1492, (100,) Olive sandstone. R. R.
1493, (101,) Olive sandstone. R. R.
1494, (102,) Olive sandstone, fucoidal markings. R. R.
1495, (103,) Red sandstone. R. R.
1496, (104,) Red micaceous sandstone. 1st red sandstone location on line to summit.
1497, (105,) Red micaceous sandstone. Station 104+150′.
1498, (106,) Dark drab-colored calc. sandstone. 105+300′.
1499, (107,) Olive sandstone, fucoidal markings. 106+100′.
1500, (108.) Sandstone. Station 107+95′.
1501, (109,) Brownish-gray sandstone. 108+50′.
1502, (110,) Gray sandstone. 109+150′.
1503, (111.) Sandstone. 109+250′.
1504, (112,) Drab-colored and gray sandstone. 109+400′.
1505, (113,) Olive shale. 109+425′.
1506, (114,) Red shale. 109+450′.
1507, (115.) Sandstone. 109+1050′.
1508, (116.) Sandstone. 109+1050′.
1509, (117.) Sandstone. At Gum Stump.

1510, (118,) Red sandstone. At Gum Stump.
1511, (119,) Olive shaly sandstone. Gum Stump+300′.
1512, (120,) Red sandstone. Overlying (119.)
1513, (121,) Red sandstone (quarry in which the stone for the Bellefonte Presb. church was obtained.) End of Gum Stump siding; R. R.
1514, (122,) Red sandstone. End of Gum Stump siding.
1515, (123,) Massive red sandstone. Trestle near Hunter's dam.
1516, (124,) Trestle near Hunter's dam.
1517, (125,) Red micaceous sandstone. Ditto.
1518, (126,) Gray sandstone. End of 1st switch; R. R.
1519, (127,) Gray sandstone. 2nd switch; R. R.
1520, (128,) Sandstone. 2nd switch; R. R.
1521, (129,) Gray sandstone. 2nd curve; 4th switch.
1522, (130,) Red micaceous sandstone. "Big Fill;" R. R.
1523, (131,) Red shale. "Big Fill;" R. R.
1524, (132,) Red micaceous sandstone. "Big Fill;" R. R.
1525, (133,) Ferruginous conglomerate. "Big Fill;" R. R.
1526, (134,) Red micaceous sandstone. "Big Fill;" R. R.
1527, (135,) Gray sandstone. 1st curve to left from ditto.

Pottsville (*Seral*) *Conglomerate.*

1528, (136,) Conglomerate. Allegheny mountain.
1529, (137,) Conglomerate. Near summit of Bellefonte & Snowshoe R. R.

1530 to 2199—J. H. DEWEES—1874.

Clinton.

Logan Gap Section in Mifflin County, Pa.

1530, (33–34,) Fossil ore.
1531, (35,) Below fossil ore.
1532, (36,) Fossil ore.
1533, (37,) Below fossil ore.
1534, (38,) Below fossil ore.
1535, (39,) Below fossil ore.
1536, (40,) Above ore sandstone.
1537, (41,) Limestone, above ore sandstone.
1537 A, (42,) Shale, above ore sandstone.
1538, (43,) Fossiliferous blue limestone.
1539, (44,) Shaly sandstone.
1540, (45,) Shaly sandstone.
1541, (46,) Bottom of ore sandstone.
1542, (47,) Shale, 14 ft. from top of ore sandstone.
1543, (48,) Shale, 33 ft. from top of ore sandstone.
1544, (49,) Under ore sandstone.
1545, (50,) Under ore sandstone, heavy compact limestone with drusy quartz cavities.
1546, (51,) Calcareous shale and sandstone under ore sandstone.
1547, (52,) Calcareous shale and sandstone under ore sandstone.
1548, (53,) Calcareous shale and sandstone under argil. shale.
1549, (54,) Shale, 76 ft. below top of ore sandstone.
1550, (55,) Hard gray-blue sandstone.
1551, (56,) Silicious shale.
1552, (57,) Silicious shale.
1553, (58,) Light-gray limestone.
1554, (59,) Brown shale.
1555, (60,) Brown and olive shale 106 ft. below the top of the Ore Sandstone.
1556, (61,) Brown and olive shale 110 ft. below.

1557, (62,) Shale, 112 ft. below top of ore sandstone.
1558, (63,) Brown shale below top of ore sandstone.
1559, (64,) Shaly sandstone.
1560, (65,) Olive shale 135′ bel. ore sandstone.
1561, (66,) Olive shale 201′ bel. ore sandstone.
1562, (67,) Olive shale 201′ bel. ore sandstone.
1563, (68,) Shaly sandstone.
1564, (69,) Silicious L. 200′ below top of ore sandstone.
1565, (70,) Limestone 65′ below top of ore sandstone.
1566, (71,) Olive shale above ore sandstone.
1567, (72,) Olive-gray sand-shale.
1568, (73,) Shale 35′ from top of ore sandstone.
1569, (74,) Shale, 30′ above top of ore sandstone.
1570, (75,) Shale, 65′—122½′ above top of ore sandstone.
1571, (76,) Shale, 135½′ above top of ore sandstone.
1572, (77,) Dark gray sandstone over spec. 1571.
1573, (78,) Calc. gray sandstone over spec. 1572.
1574, (79,) Shale, 136½′ from top of ore sandstone.
1575, (80,) Olive shale.
1576, (81,) Blue-gray siliceous limestone.
1577, (82,) Shale.
1578, (83,) Limestone.
1579, (84,) Shale.
1580, (85,) Silicious limestone.
1581, (86,) Olive shale.
1582, (87,) Dark gray sand shale.
1583, (88,) Olive gray sand shale.
1584, (89,) Olive gray shale.
1585, (90,) Red shale.
1586, (91,) Red shale.
1587, (92,) Red shale.
1588, (93,) Red shale.
1589, (94,) Red shale.
1590, (95,) Red shale, ferruginous.
1591, (96,) Olive shale. *Logan Gap, above the dam at Mann's Axe Factory.*
1592, (97,) Olive shale. " " "
1593, (98,) Green sandstone. " " "
1594, (99,) Olive shale. " " "

1595, (100,) Grayish green s. s. *Logan Gap, above the dam at Mann's Axe Factory.*
1596, (101,) Olive shale. " " "
1597, (102,) Sandstone. " " "
1598, (103,) Shale. " " "
1599, (104,) Olive shale. " " "
1600, (105,) Olive shale. " " "
1601, (106,) Silicious limestone. " " "
1602, (107,) Olive shale. " " "
1603, (108,) Yellowish shale. " " "
1604, (109,) Silicious gray-green shale. " " "
1605, (110,) Brownish-red shale. " " "
1606, (111,) Olive shale. " " "
1607, (112,) Buff colored shale. Logan Gap.
1608, (113,) Shale. Logan Gap.

Medina.

1609, (114,) Grayish-white Medina Sandstone, Logan Gap.

Clinton.

1610, (115,) Red shale. South of Logan gap.
1611, (116,) Red shale. " "
1612, (117,) Red shale. " "
1613, (118,) Red shale. " "
1614, (119,) Red shale. " "
1615, (120,) Olive and red shale. "
1616, (121,) Shale. " "
1617, (122,) Blue-gray limestone. "
1618, (123,) Red shale. " "
1619, (124,) Olive shale. " "
1620, (125,) Red shale. " "
1621, (126,) Yellowish-green shale. "
1622, (127,) Yellowish-green shale. "
1623, (128,) Yellowish-green shale. "
1624, (129,) Yellowish-green shale. "
1625, (130,) Yellow, calcareous shale. "
1626, (131,) Grayish-black calcareous shale.
1627, (132,) Yellow silicious shale. "
1628, (133,) Red shale. " "

1629, (134,) Olive shale. South of Logan Gap.
1630, (135,) Greenish-yellow shale. "
1631, (136,) Shale. " "
1632, (137,) Grayish-blue shale. "
1633, (138,) Grayish-blue shale. "
1634, (139,) Red shale. " "
1635, (140,) Brownish-yellow shale. "
1636, (141,) Mottled, red, and yellow-brown shale.
1637, (142,) Greenish-yellow shale. "
1638, (143,) Green shale. " "
1639, (144,) Green shale. " "
1640, (145,) Silicious, yellowish-brown shale.
1641, (146,) Shale. " "
1642, (147,) Greenish-yellow shale. "
1643, (148,) Olive shale. " "
1644, (149,) Green-gray silic shale. "
1645, (150,) Olive shale. " "
1646, (151,) Olive shale. " "
1647, (152,) Olive shale. " "
1648, (153,) Yellowish-green shale. "
1649, (154,) Olive shale. Logan Gap, at Yeagertown.
1650, (155,) Olive shale. " "
1651, (156,) Grayish-red shale. " "
1652, (157,) Grayish-red shale. " "
1653, (158,) Grayish-red shale. " "
1654, (159,) Olive shale. " "
1655, (160,) Gray-black silicious limestone "
1656, (161,) Olive shale. " "
1657, (162,) Olive shale. " "
1658, (163,) Olive shale. " "
1659, (164,) Olive shale. " "
1660, (165,) Mottled, red, and olive shale. "
1661, (166,) Grayish-green shale. "
1662, (167,) Grayish-green silic shale. "
1663, (168,) Grayish-red shale. " "
1664, (169,) Olive shale. " "
1665, (179,) Greenish-yellow shale. "
1666, (171,) Red shale. " "
1667, (172,) Red shale. " "

1668, (173,) Argillaceous sand shale. Logan Gap, at Yeagertown.
1669, (174,) Yellow-gray shale. At Yeagertown bridge.
1670, (175,) Yellow and bluish-red shale. " "
1671, (176,) Yellow sand shale. " "
1672, (177,) Yellow and bluish-red S. shale. "
1673, (178,) Dark gray-black sandstone " "
1674, (179,) Grayish-black shale. " "
1675, (180,) Grayish-black shale. " "
1676, (181,) Gray-black sandstone compact. "
1677, (182,) Greenish-flaggy sandstone " "
1678, (183,) Olive shale. " "
1679, (184,) Red shale. " "
1680, (185,) Reddish-brown sand shale. S. of Logan Gap.
1681, (186,) Grayish-green sandstone. " "
1682, (187,) Bluish-gray limestone. " "
1683, (188,) Black limestone. " "
1684, (189,) Bluish-red sand shale. " "
1685, (190,) Grayish-green shale. " "
1686, (191,) Grayish-green shale. " "
1687, (192,) Red-gray sand shale. " "
1688, (193,) Olive shale. " "
1689, (194,) Bluish-red shale. " "
1690, (195,) Yellow-brown shale. " "
1691, (196,) Greenish-gray shale. " "
1692, (197,) Red and yellow-brown shale. South of Logan, at lower end of Yeagertown.
1693, (198,) Yellow-brown shale. " "
1694, (199,) Red shale. " "
1695, (200,) Brownish-yellow shale. " "
1696, (201,) Red shale. " "
1697, (202,) Brownish-yellow shale. " "
1698, (203,) Blue-red shale. " "
1699, (204,) Blue-red shale. " "
1700, (205,) Reddish-gray shale. Below Yeagertown; Jacks Mountain.
1701, (206,) Blue-gray shale. " "
1702, (207,) Yellow-brown shale. " "
1703, (208,) Red shale. " "

1704, (209,) Blue-gray shale. Below Yeagertown; Jacks Mountain.
1705, (210,) Mottled red and olive shale. " "
1706, (211,) Red shale. " "
1707, (212,) Red sandstone. " "
1708, (213,) Reddish sand-shale. " "
1709, (214,) Reddish sand-shale. " "
1710, (215,) Red shale. " "
1711, (216,) Red shale. " "
1712, (217,) Greenish-yellow shale. " "
1713, (218,) Greenish-yellow shale. Mifflin Co., on Ferguson Valley road, ¼ mile W. of Yeagertown.

Clinton specimens collected along the Base Line run from Logan's Gap, south-westward, through Ferguson Valley, past the fossil ore mines.

1714, (219,) Red shale. ¼ mile west of Yeagertown.
1715, (220,) Greenish-yellow shale. " "
1716, (221,) Red shale. " "
1716A, (222,) Red shale. " "
1717, (223,) Greenish shale. " "
1718, (224,) Red shale. " "
1718*a*, (225,) " "
1719, (226,) Red shale. " "
1720, (227,) Brownish-yellow shale. " "
1721, (228,) Greenish-gray shale. " "
1722, (229,) Greenish-gray shale. ⅜ *mile west of Yeagertown.*
1723, (230,) Gray-black calcareous sand shale. "
1724, (231,) Greenish-gray shale. " "
1725, (232,) Reddish-yellow sand shale. " "
1726, (233,) Dark gray limestone. " "
1727, (234,) Dark gray limestone. " "
1728, (235,) Reddish-blue shale. " "
1729, (236,) Very dark gray-black silicious limestone. "
1730, (237,) Dark gray shale. " "
1731, (238,) Soft reddish gray shale. " "
1732, (239,) Red shale. ½ mile west of Yeagertown.
1733, (240,) Greenish yellow-gray shale. Ditto.
1734, (241*a*,) Gray sandstone ⅝ mile west of Yeagertown.

1735, (241*b*.) Red shale. *Ferguson Valley*, 1¼ *miles west of Yeagertown.*
1736, (242,) Red shaly sandstone " "
1737, (243,) Red shale. " "
1738, (244,) Green and red shale. " "
1739, (245,) Red shale. " "
1740, (246,) Greenish-yellow shale. " "
1741, (247,) Red shale. " "
1742, (248,) Greenish-yellow shale. " "
1743, (249,) Red shale. " "
1744, (250,) Yellow-gray shale. " "
1745, (251,) Red shale. Mifflin county, 1½ miles "
1746, (252,) Greenish-gray shale. *South of Base Line, near brick school-house.*
1747, (253,) Bluish-red shale. " "
1748, (254,) Red shale. " "
1749, (255,) Grayish-green shale. " "
1750, (256,) Red shale. " "
1751, (257,) Red and grayish-green shale. "
1752, (258,) Greenish-gray shale. " "
1753, (259,) Red shale. " "
1754, (260,) Greenish-yellow shale. " "
1755, (261,) Red shale. " "
1756, (262,) Grayish-green shale. " "
1757, (263,) Green shale. " "
1758, (264,) Yellowish-brown sand shale. "
1759, (265,) Green shale. " "
1760, (266,) Greenish-gray shale. " "
1761, (267,) Greenish-gray shale. " "
1762, (268,) Yellowish-brown shale. " "
1763, (269,) Greenish-gray shale. " "
1764, (270,) Red and greenish-gray shale. "
1765, (271,) Dark, thinly bedded black S. S. "
1766, (272,) Green shale. " "
1767, (273,) Red and green-gray shale. "

Lower Helderberg Limestone.

1768, (319,) Gray-black lime shale. *Above Logan Steel Works, near breast of dam.*
1769, (320,) Black limestone. " "
1770, (321,) Limestone and shale. " "
1771, (322,) Shaly limestone. " "
1772, (323,) Dark gray limestone " "
1773, (324,) Black limestone. " "
1774, (325,) Shaly limestone. *Logan Steel Works, above breast of dam.*
1775, (326,) Yellow-brown calc. S. shale. "
1776, (327,) Gray-green lime shale. " "
1777, (328,) Gray limestone and brown shale. "
1778, (329,) Grayish-green lime shale. "
1779, (330,) Calcareous sand shale. " "
1780, (331,) Calcareous sand shale. " "
1781, (331′,) Grayish-green lime shale. "
1782, (332,) Grayish green lime shale. "
1783, (334,) Grayish-green lime shale. "
1784, (335,) Gray-black silicious limestone. "
1785, (336,) Greenish-gray lime shale. "
1786, (337,) Red shale. " "
1787, (338,) Yellow and yellow-brown lime shale. "
1788, (339,) Compact black limestone. "
1789, (340,) Reddish-gray limestone. " "
1790, (341,) Bluish-gray silic. limestone. "

Medina and Oneida.

1791, (448,) Red sandstone. *Logan's Gap below Mann's axe factory.*
1792, (449,) Red sandstone. " "
1793, (450,) Red sandstone. " "
1794, (452,) Red sandstone. " "
1795, (453,) Red sandstone conglomerate. "
1796, (454,) Red sandstone. Near J. H. Mann's house.
1797, (455,) Red sandstone. J. H. Mann's quarry.
1798, (456,) Red sandstone. " "
1799, (457,) Conglomerate. " "
1800, (468,) Red sandstone (shaly fracture.) "
1801, (459,) Red sandstone (fine grained.) "

Oneida.

1802, (460,) Red conglomerate. *Logan Gap, above Toll-gate, above Mann's Axe Factory.*
1803, (461,) Red conglomerate. " "
1804, (462,) Red conglomerate. " "
1805, (463,) Red conglomerate. " "
1806, (464,) Gray conglomerate. " "
1807, (465,) Gray sandstone. " "
[1808, (466,) Sandstone.]
1809, (467,) Gray sandstone. " "

Hudson River.

1810, (468,) Shaly sandstone in slates of III. "
1811, (469,) Grayish-black sandstone. " "
1812, (470,) Greenish-brown shale. " "
1813, (471,) Blue-gray sandstone. *Near Reedsville R. R. Depot.*
1814, (472,) Shale. " "
1815, (473,) Blue-gray shale. " "

Utica Slate.

1816, (475,) Black shale. " "
1817, (476,) Black shale. " "
1818, (477,) Black slate. " "

Lower Helderberg.

1819, (560,) Black limestone. *Near Lewistown, on Turnpike, near Toll-gate.*
1820, (561,) Black limestone. " "
1821, (562,) Gray-black limestone. " "
1822, (563,) Gray-black limestone. " "
1823, (564,) Gray-black limestone. " "
1824, (565,) Gray-black limestone. " "

Marcellus.

1825, (566,) Black shale. " "
1826, (567,) Shale—bottom of VIII. " "
1827, (568,) Shale—bottom of VIII. " "

1828, (569,) Black shale. *Near Lewistown, on Turnpike, near Toll-gate.*
1829, (570,) Yellowish-red shale of No. VIII. "
1830, (571,) Reddish-gray shale. " "

Lower Helderberg.

1831, (572,) Black limestone under Oriskany. "
1832, (573,) Lime-shale. " "
1833, (575,) Compact black limestone. " "
1834, (575,) Lime-shale. " "
1835, (576,) Compact black limestone. " "
1836, (577,) Compact black lime-shale. " "
1837, (578,) Gray-black lime-shale. " "
1838, (579,) Black limestone. " "
1839, (580,) Gray limestone. " "
1840, (581,) Dark-gray limestone. " "
1841, (582,) Gray limestone. " "
1842, (583,) Gray limestone. " "
1843, (584,) Gray limestone. " "
1844, (585,) Light-gray limestone. " "

Trenton Limestone.

1845, (686,) Dark-gray limestone. *Reedsville above dam, near Murray's Hotel.*
1846, (687,) Gray limestone. " "
1847, (688,) Dark gray-black limestone. " "
1848, (689,) Dark gray-black limestone. " "
1849, (690,) Lime-shale. " "
1850, (691,) Black limestone. " "
1851, (692,) Black limestone with fossils. " "
1852, (693,) Gray limestone with fossils. " "
1853, (694,) Gray-blue hydraulic L. *Reedsville above dam.*
1854, (695,) Gray-black hydraulic limestone. "
1855, (696,) Gray-blue hydraulic limestone. "
1856, (697,) Gray-black limestone. " "
1857, (698,) Gray limestone with minute crystals of calcite.

Clinton.

1858, (1902,) Lime-shale. Below Logan Gap.
1859, (376,) Fossil ore. " "

1859A, (375,) Fossil ore. Below Logan Gap.
1860, (378,) Greenish-yellow lime-shale. "

Clinton.

1861, (274,) Red shale. *Section along Means' Ore-bank.*
1862, (275,) Red shale. " " "
1863, (276,) Yellowish-brown shale. " "
1864, (277,) Yellowish-red and green shale. " "
1865, (278,) Grayish-red shale. " "
1866, (279,) Greenish-gray shale. " "
1867, (280,) Brown-yellow shale. " "
1868, (281,) Greenish-gray shale. " "
1869, (282,) Greenish-gray shale. " "
1870, (283,) Green shale. " "
1871, (285,) Underlying fossil ore, in ore vein. "
1872, (287,) Ore sandstone underlying ore. " "
1873, (288,) Shale. 3d layer underlying ore. "
1874, (289,) Ore sandstone under spec. 1873. "
1875, (290,) Compact red-gray sandstone. " "
1876, (291,) Dark gray silic. limestone. " "
1877, (297,) Shale. " "
1878, (294,) Shale. " "
1879, (295,) Shale. " "
1880, (286,) Grayish-green shale 2d layer below ore. "
1881, (297,) Gray limestone fossiliferous. " "
1882, (298,) Ore sandstone. " "
1883, (299,) Grayish-green shale. " "
1884, (302,) Blue limestone. " "
1885, (303,) Silicious limestone with shale. " "
1886, (304,) Dark-gray silicious limestone " "
1887, (305,) Green shale. " "
1888, (306,) Black silicious limestone " "
1889, (307,) Gray sandstone. " "
1890, (308,) Dark-gray limestone. " "
1891, (309,) Sandy limestone. " "
1892, (310,) Gray silicious limestone. " "
1893, (310,) Sandy lime-shale. " "
1894, (312,) Dark gray shaly limestone " "
1895, (313,) Grayish-green argillaceous shale. "

1896, (314,) Grayish-green shale. *Along Mean's Ore-bank Section.*
1897, (315,) Red shale. " "
1898, (316,) Red shale. " "
1899, (317,) Calcareous red and gray shaly sandstone. "
1900, (318,) Grayish-green silicious limestone "
1901, (352,) Fossil ore, with fossils. *3½ miles west from Yeagertown, and 2 miles from Lewistown, N. from Mrs. Orts brick house.*
1902, (341,) Greenish yellow shale. "
1903, (342,) Dark gray sandstone. "
1904, (343,) Gray red shale. "
1905, (344,) Red shaly sandstone. "
1906, (345,) Green sandstone. "
1907, (346,) Mottled red and green shale. "

Oriskany.

1908, (671,) Yellowish white shale. *On wagon road N. W. from Lewistown.*
1909, (672,) Shale. "
1910, (673,) Shale. "
1911, (674;) Shale and chert. "
1912, (675,) Chert. "
1913, (676,) Iron ore, argillaceous. "
1914, (679,) Shale. "
1915, (681,) Blue black limestone. On wagon road from Lewistown to Aurands, Ferguson Valley, N. of Squaw Hollow, N. slope of ridge.
1916, (682,) Bluish red and gray shale. Ditto.
1917, (683,) Yellowish brown shale. Ditto.
1918, (684,) Bluish brown shale. Ditto.
1919, (685,) Bluish red and gray chert. Ditto.

Clinton.

(*In the Graham's Ore-bank Section.*)

1920, (351,) Greenish shale above ore.
1921, (355,) Dark green sand-shale underlying ore.
1922, (357,) Ferruginous sandstone.
1923, (359,) Ferruginous sandstone.
1924, (362,) Green shale above ore.

1925, (363, 364,) Gray, fossiliferous limestone.
1926, (365,) Greenish-gray shale.
1927, (366,) Greenish-brown lime shale.
1928, (367,) Brown ferruginous S. S.
1929, (368,) Greenish-gray lime shale.
1930, (369,) Fossil ore—outcrop.
1931, (372,) Limestone—outcrop.
1932, (373,) Fossil ore—outcrop.
1933, (383,) Yellowish-brown shale.
1934, (384,) Yellow shale.

(*In the Snyder Ore-bank Section.*)

1935, (386,) Fossil ore—upper portion of vein.
1936, (387,) Fossil ore—bottom of vein.
1937, (388,) Green shale.
1938, (389,) Ferruginous sand-rock with quartz.
1939, (390,) Green shale overlying ore.
1940, (391,) Green shale overlying ore.
1941, (392,) Fossil ore.
1942, (394,) Reddish-brown shale.
1943, (395,) Reddish-brown shale.
1944, (396,) Greenish-gray sandstone.
1945, (397, 398,) Shale.

(*In the McKee's Ore-bank Section.*)

1946, (405,) Ferruginous S. S. below ore-bed.
1947, (408,) Ore S. S. below spec. 1946, yellow, decomposed, and very friable.
1948, (414,) Coarse, conglomeritic, ferruginous, sandstone—under ore.
1949, (416, 417,) Mottled, yellow and blue clay above ore.
1950, (420,) Mottled, yellow and blue clay above ore.
1951, (421,) Reddish-brown S. S. (Ore S. S.)
1952, (422,) Green shale.
1953, (423,) Sandstone.
1954,
1955, (424,) Grayish-green sandstone.
1956, (426,) Reddish-yellow S. S.
1957, (427,) Reddish-yellow S. S.
1958, (429,) Grayish-green shaly S. S.

1959, (430,) Green sand shale.
1960, (431,) Green shale.
1961, (432,) Greenish-gray shale.
1962, (433,) Green shale.
1963, (434,) Green shale.
1964, (435,) Greenish-gray shale.
1965, (436,) Greenish-gray shale.
1966, (437,) Greenish-gray shale.
1967, (438,) Bluish-gray shale.
1968, (440,) Ore sandstone.
1969, (442,) Kiln-burnt clay.

(*In the McVeytown Section.*)

1970, (478,) Red shale. Juniata river, at bridge nearest McVeytown R. R. station.
1971, (479,) Red and green shale. Ditto.

Lower Helderburg.

1972, (480,) Gray limestone. McVeytown R. R. station, N. W. side of Juniata river, near limekiln.
1973A, (481,) Yellowish gray lime shale. Ditto.
1973, (482,) Dark gray lime shale.
1974, (483,) Grayish blue limestone. *McVeytown, S. E. of Dull & Bradley's Sand Quarry.*
1975, (484,) Grayish black limestone. "

Oriskany.

1976, (485,) Yellowish brown shale. "
1977, (485A,) Reddish blue shale. "
1977, (1002.) Reddish blue shale. "
1978, (485B,) Yellowish brown clay shale. "
1979, (486,) Yellowish brown clay shale. "
1980, (487,) Yellow sand shale and sandstone "
1980, (1000,) White sandstone, (washed.) "
1981, (488,) Brown shale. "
1982, (489,) White, friable sandstone. "
1983, (490,) Dark, bluish gray lime shale. "
1984, (491,) White sandstone. *Dull & Bradley's Sand Bank, McVeytown Gap.*
1985, (492,) White sandstone with gray blotches. "

1986, (493,) Yellow sandstone. *Dull & Bradley's Sand Bank, Mc Veytown Gap.*
1987, (494,) Yellow and yellowish brown clay. "
1988, (495,) Greenish gray shale. "
1989, (496,) Black limestone. *North of Dull & Bradley's Sand Bank, Mc Veytown Gap.*
1990, (497,) Grayish black limestone. "
1991, (498,) Bluish gray limestone. "
1992, (499,) Grayish black limestone. "
1993, (502,) Argillaceous limonite. "
1994, (503,) Greenish gray shale. "
1995, (505,) Bluish-gray limestone fossiliferous. *N. W of Dull & Bradley's sand quarry.*
1996, (504,) Sandstone. "
1997, (506,) Black limestone. "
1998, (507,) Compact grayish-black limestone. "
1999, (508,) Gray crystalline limestone. "
2000, (509,) Blue limestone. "
2001, (510,) Black limestone. "
2002, (516,) Gray crystalline limestone. "
2003, (511,) Brownish-gray shaly limestone. "
2004, (512,) Bluish-gray shaly silicious L. S. "
2005, (513,) Compact black limestone. "
2006, (514,) Blue limestone. "
2007, (515,) Gray limestone. "
2008, (517,) Dark-gray sandy lime-shale. "
2009, (518,) Black sandy lime-shale. "
2010, (519,) Black sandy lime-shale. "
2011, (520,) Yellowish-gray sandstone. "
2012, (521,) Reddish-gray sandstone. "
2013, (522,) Brown shale. *N. of Ross ore-opening, Mc-Veytown Gap.* "
2014, (523,) Black limestone. "
2015, (525,) Dark-blue limestone. "
2016, (526,) Gray limestone, with fossils. "
2017, (527,) Bluish-gray shaly limestone. "
2018, (528,) Gray crystalline limestone. "
2019, (529,) Gray crystalline limestone. "
2020, (530,) Compact black limestone. "

2021, (531,) Grayish-brown and blue limestone. S. E. from Dunkard school house.
2022, (532,) Yellowish-white limestone. Ditto.
2023, (533,) Black limestone. N. E. from Dunkard S. H.

Marcellus.

2024, (534,) Black slate top of ore-vein. *In Ferguson Valley road, between Dunkard S. H. and Dunkard meeting house, head of McVeytown Gap.*
2025, (536,) Brown hematite. "
2026, (537,) Middle bench ore. "
2027, (540,) Limestone, bottom wall of lower bench. "
2028, (541,) Argillaceous lime-shale, roof of above. "
2029, (542,) Limonite. "
2030, (543,) Limonite. "
2031, (545,) Bituminous lime-shale. "
2032, (546,) Ore (6″—10″ thick) in hematite vein. "
2033, (547,) Blue-black slate, top slate of ore vein. "
2034, (548,) Gray limestone. Road north of Adam Rupert's.
2035, (549,) Iron-ore, bottom bench. Ditto.

Oriskany and Marcellus.

2036, (551,) Sand-ore. Mifflin Co., on Kansas road, near (sta. 800) on first road W. of McVeytown, about 500′ S. of Kansas road.
2037, (553,) Sand-ore. Ditto.
2038, (554,) Gray limestone. On road leading S. from Kansas road, first road W. of McVeytown.
2039, (555,) Grayish-brown limestone. Ditto.
2040, (556,) Grayish-black limestone. Ditto.
2041, (556,) Sand-ore. *On road leading S. from Kansas road, first road W. of McVeytown, E. of Long Hollow.*
2042, (589,) Bog ore. "
2043, (661,) Yellowish-green shale between VII and VIII.
2044, (663,) Gray-blue limestone, under ore vein. "
2045, (665,) Clay iron ore. "
2046, (669,) Black slate. "

Juniata River Section.

Clinton.

2047, (593,) Ore S. S., lower level of fossil ore vein. *Jack's Narrows, N. W. from Matilda Furnace, lower fossil ore-opening.*
2048, (594,) Iron-sand rock, lower ore opening. "
2049, (595,) Greenish gray shale. "
2050, (596,) Bluish green shale. "
2051, (597,) Fossil ore, bottom bench. "
2052, (601,) Grayish green shale, between top and bottom benches of ore. "
2053, (602,) Bluish green shale over ore vein. "
2054, (603,) Blue calcareous shale, 4′ above ore vein. "
2055, (604,) Ore sandstone. "
2056, (605,) Ore sandstone. "
2057, (606,) Ore sandstone, bottom. "
2058, (607,) Ore sandstone. "
2059, (608,) Ore sandstone, green. "
2060, (609,) Ore sandstone, greenish gray. "
2061, (610,) Calcareous S. S. with fossils. "
2062, (611,) Grayish brown lime shale with fossils. "
2063, (612,) Reddish brown and greenish brown shale. "
2064, (613,) Reddish brown sandstone. "
2065, (617,) Greenish brown shale over fossil ore. "
2066, (618,) Brown sandstone. "
2067, (619,) Gray flaggy S. S. and grayish green shale. "
2068, (620,) Fossil ore. "
2069, (621,) Red shale. "
2070, (622,) Dark green flaggy sandstone. "
2071, (623,) Greenish gray limestone, fossiliferous. "
2072, (657,) Chert. *Physic ore-opening, McVeytown Gap.*
2073, (624,) Greenish brown shale. " "
2074, (625,) Green shale. " "
2075, (626,) Grayish green sandstone. *Jack's Narrows, along Juniata River, N. W. from Matilda Furnace.*
2076, (627,) Shale. "
2077, (628,) Gray shale. "

2078, (629,) Bluish gray shale. *Jack's Narrows, along Juniata River, N. W. from Matilda furnace.*
2079, (630,) Green sandy shale. "
2080, (631,) Reddish blue shale and gray shale. "
2081, (632,) Reddish blue and gray shale. "
2082, (633,) Reddish blue and gray shale. "
2083, (634,) Reddish brown sandstone. "
2084, (635,) Bluish gray sandy shale. "
2085, (636,) Bluish gray sandy shale. "
2086, (637,) Gray argillaceous sandstone. "
2087, (638,) Green shale. "
2088, (639,) Reddish blue shale. "
2089, (640,) Green shale. "
2090, (641,) Green shale. "
2091, (642,) Green shale. "
2092, (643,) Green shale. "

Medina.

2093, (644,) Sandstone, top of Medina. "
2094, (645,) Variegated red sandstone. "
2095, (646,) Variegated red sandstone. "
2096, (647,) Gray sandstone. "
2097, (648,) Bluish gray argillaceous S. S. "
2098, (649,) Bluish gray argillaceous S. S. "
2099, (650,) Bluish gray sandstone. "
2100, (651,) Dark gray sandstone. "
2100A, (651,) Mottled gray and red S. S. "
2101, (652,) Bluish red shale. "
2102, (653,) Reddish brown sandstone. "
2103, (654,) Light gray sandstone. "

Lower Helderberg.

2104, (699,) Dark blue limestone. *East bank of Juniata River, S. E. from Matilda furnace.*
2105, (700,) Dark blue limestone. "
2106, (701,) Bluish-gray lime-shale. "
2107, (702,) Brown lime-shale. "
2108, (703,) Grayish-blue limestone. "
2109, (704,) Blue silicious lime-shale. "
2110, (705,) Grayish-blue limestone, thinly bedded. "
2111, (706,) Gray lime-shale. "

Clinton and Helderberg.

2112, (707,) Red shale. *East bank of Juniata River, S. E. from Matilda furnace.*
2113, (708,) Green shale in thin layers. "
2114, (709,) Green shale in thin layers. "
2115, (710,) Yellow argillaceous lime-shale. "
2116, (711,) Greenish-gray shale. "
2117, (712,) Green shale. "
2118, (713,) Blue shale alternating with green sandy shale.
2119, (714,) Gray, laminated, lime-shale. "
2120, (715,) Bluish-gray shale. "
2121, (716,) Bluish-gray calcareous shale. "
2122, (717,) Green shale. "
2123, (718,) Blue limestone. "
2124, (719,) Blue limestone. "
2125, (720,) Calcareous sand-shale alternating with clay.
2126, (721,) Dark gray calcareous shale. "
2127, (722,) Gray shale. "
2128, (723,) Yellow argillaceous calcareous shale. "
2129, (724,) Bluish-red and green shales. "
2130, (725,) Green and bluish-red sand-shale. "
2130, (726,) Gray calcareous sand-shale. "
2131, (728,) Bluish-gray limestone. "
2132, (729,) Brown argillaceous limestone. "
2133, (730,) Green shale alternating with yellow shale. "
2134, (731,) Gray calcareous shale. "
2135, (732,) Grayish-blue calcareous shale. "
2136, (733,) Grayish-blue limestone. "
2137, (734,) Blue limestone. "
2138, (735,) Green sandy calcareous shale. "
2139, (736,) Bluish-gray calcareous sandy shale. "
2140, (737,) Gray limestone. "
2141, (738,) Bluish-gray L. S. with bands of calcite. "
2142, (739,) Bluish-gray limestone. "
2143, (740,) Bluish-gray limestone with calcite. "
2144, (741,) Blue sandy calcareous shale. "
2145, (742,) Gray silicious limestone. "
2146, (743,) Yellow calcareous sand-shale. "
2147, (744,) Grayish-blue limestone. "

2148, (745,) Grayish-blue limestone. *East bank of Juniata River, S. E. from Matilda furnace.*
2149, (746,) Light brown limestone. "
2150, (747,) Blue limestone. "
2151, (748,) Blue limestone. "
2152, (749,) Yellowish-brown limestone with oxide of iron.
2153, (750,) Bluish-gray lime-shale. "
2154, (751,) Blue lime-shale. "
2155, (752,) Bluish-gray L. S. with bands of calcite. "
2156, (753,) Grayish-blue argillaceous shale. "
2157, (754,) Black limestone. "
2158, (755,) Blue shaly limestone. "
2159, (756,) Grayish-blue, sandy calcareous shale. "
2160, (757,) Slaty calcareous shale. "
2161, (758,) Gray limestone. "
2162, (760,) Grayish-brown limestone. "
2163, (761,) Black limestone. "
2164, (762,) Calcite, forming seams in black limestone. "
2165, (763,) Grayish brown limestone. "
2166, (764,) Argillaceous sand-shale. "
2167, (765,) Bluish-gray limestone. "
2168, (766,) Decomposed argillaceous sand-shale. "
2169, (767,) Grayish-blue argillaceous limestone. "
2170, (768,) Lime-shales, alternating with clays. "
2171, (769,) Argillaceous calcareous shale. "
2172, (770,) Argillaceous calcareous shale. "
2173, (771,) Bluish-gray limestone. "
2174, (772,) Decomposed calcareous shale and blue L.
2175, (773,) Argill. L. with calcite and bituminous matter.
2176, (774,) Grayish-brown limestone. "
2177, (775,) Grayish-brown limestone. "
2178, (776,) Limestone. "
2179, (777,) Limestone. "
2180, (778,) Limestone, with iron oxide and calcite. "
2181, (779,) Blue limestone. "
2182, (780,) Dark gray crystalline L. S. "
2183, (781,) Dark gray crystalline L. S. "
2184, (782,) Light gray crystalline L. S. "
2185, (783,) Light gray crystalline L. S. "

2186, (784,) Grayish-brown calcareous shale. *East bank of Juniata River, S. E. from Matilda furnace.*
2187, (785,) Grayish-brown calcareous shale. "
2188, (786,) Bluish-gray crystalline L. S. "

Oriskany S. S.

2189, (787,) Mottled, white and brown S. S. "
2190, (788,) Blue limestone. "
2191, (789,) Sandstone with fossils. "
2192, (790,) Sandstone with fossils. "

Hamilton.

2193, (791,) Black slate. "
2194, (792,) Black slate. "
2195, (793,) Green sand-shale. "
2196, (794,) Green shaly sandstone. "
2197, (795,) Green shaly sandstone, stained with iron oxide. Hamilton, south of Jacks narrows.
2198, (796,) Grayish-green sandstone. Ditto.
2199, (797,) Grayish-green sand-shale. E. bank of Juniata River, S. E. from Matilda furnace.

2200 to 2247—ANDREW SHERWOOD, 1875.

Waddle's Brook Section, Clymer Township, Tioga Co.

Chemung.

2200, (1,) Thick-bedded gray S. S.
2201, (2,) Calcareous S. S.
2202, (4,) Gray calcareous sandstone.
2203, (4,) Gray calcareous sandstone.
2204, (5,) Soft gray shale.
2205, (6,) Calcareous S. S. in thin bands.
2206, (7,) Soft gray and blue shale.
2207, (8,) Calcareous S. S.
2208, (9,) Soft gray shale.
2209, (10,) Thinly bedded gray sandstone.
2210, (11,) Soft gray shale.
2211, (12,) Thin-bedded gray sandstone.
2212, (13,) Calcareous S. S.
2213, (14,) Soft gray, and bluish shale with fragments of iron ore.
2214, (15,) Red shale.
2215, (16,) Red sandstone.
2216, (17,) Mottled, red and green shale.
2217, (18,) Gray shale and shaly S. S.
2218, (20,) Gray sandstone.
2219, (22,) Red shale and shaly S. S.
2220, (22,) Red shale and shaly S. S.
2221, (22,) Red shale and shaly S. S.
2222, (23,) Gray sandstone, shale, and calcareous S. S., with some thin bands of calcareous rock filled with minute fossils.
2223, (24,) Red shale.
2224, (25,) Gray sandstone.
2225, (27,) Gray shale, and shaly S. S., gray sandstone and calcareous S. S., with fossils at intervals.
2226, (28,) Red shale.
2227, (29,) Gray sandstone.
2228, (30,) Red shale, with poorly preserved fossils.
2229, 2230, (31,) Gray shale and calcareous S. S. in thin band with fossils.

2231, (32,) Red shale.

2232, (33,) Gray shale and gray sandstone with *rhynchonella*, &c.

Chemung and Catskill.

2233, Chemung. Green and brownish green S. S. with fossils. Tioga Co., Covington township.

2234, Catskill. Red, flaggy micaceous S. S. with fossils. Tioga Co., 3 miles S. from Westfield.

2235, Chemung. Red, sandy, micaceous shale with fossils, from a vein of iron ore 8″ thick. Tioga Co., ½ mile east from Covington.

2236, Chemung. Grayish green calcareous sandstone, fossiliferous. Tioga Co., Covington township.

2237, Catskill. Green and grayish blue calcareous shale. Tioga Co., 14 miles S. from Gaines P. O.

2238, Catskill. Red shale. Tioga Co., on Elk Run 2 miles from Gaines P. O., near T. S. Watson's house.

2239, Catskill. Red sandy shale. Tioga Co., 2 miles east from Gaines P. O., on Pine creek.

2240, Catskill. Red micaceous sandy shale. Tioga Co., 14 miles from Gaines P. O.

2241, Chemung. Grayish green S. S. with fossils. Tioga Co., Rutland township.

2242, Catskill. Compact green and grayish green calcareous S. S. with shells and fish remains. Tioga Co., on Pine creek, at mouth of Marsh creek.

2243, Chemung. Brownish green shaly sandstone, with fossils. Tioga Co., Charleston townstip.

2244, Chemung. Greenish brown flaggy sandstone with fossils. Bradford Co., Troy township, near East Troy.

2245, Chemung. Conglomerate. Bradford Co., Ridgebury township, on Fall creek.

2246, Chemung. Reddish brown conglomeritic sandstone. Tioga Co., Jackson township, at Mitchell's Steam Mill.

2247, Chemung. Grayish green flaggy sandstone, fossiliferous. Tioga Co., Charleston township.

2248 TO 2572—CHAS. A. ASHBURNER—1875.

Aughwick Valley Section, Huntingdon Co.

Calciferous.

2248, (1,) Dolomitic limestone. Grove Quarry—near Orbisonia, Pa.
2249, (2,) Magnesian limestone. Grove Quarry.
2250, (3,) Magnesian limestone. Grove Quarry.

Trenton.

2251, (4,) Limestone. Blacklog Valley; 1¼ mile from Orbisonia, Huntingdon Co., Pa.
2252, (5,) Limestone. Blacklog Valley. Ditto.

Utica and Hudson River.

2253, (6,) Black slate. Rockhill Gap, near Orbisonia.
2254, (7,) Black slate. "
2255, (8,) Black slate. "
2256, (9,) Shale. "
2257, (10,) Shale. "

Oneida.

2258, (11,) Gray conglomerate. "
2259, (12,) Gray sandstone. "
2260, (13,) Conglomerate. "

Medina.

2261, (14,) Red sandstone. "
2262, (15,) Red sandstone. "
2263, (16,) Sandstone. "
2264, (17,) Red sandstone. "
2265, (18,) Sandstone. "
2266, (19,) Limonite. Mountain-ore bank—crest of Blacklog Mtn., S. W. from Orbisonia.

Clinton.

2267, (20,) Gray shaly S. S. Rockhill Gap—Huntingdon Co.

2268, (21,) Red shale. Rockhill Gap—Huntingdon Co.
2269, (22,) Mottled red shale. Rockhill Gap—Huntingdon Co.
2270, (23,) Olive shale. Rockhill Gap—Huntingdon Co.
2271, (24,) Olive shale. R. R. cut between Three Springs and Saltillo.
2272, (25,) Olive shale. R. R. cut. Ditto.
2273, (26,) Brown hematite. West flank of Jacks Mt., near Saltillo.
2274, (27,) Cellular-brown hematite. Ditto.
2275, (28,) Sandstone. Rockhill Gap, Huntingdon Co.
2276. (29,) Sandstone. Rockhill Gap, Huntingdon Co.
2277, (30,) Sandstone. Rockhill Gap, Huntingdon Co.
2278, (31,) Sandstone. Opposite Lea's & McVitty's Tannery, Saltillo, Clay Twp., Huntingdon Co.
2279, (32,) Sandstone. Mines of Rockhill Coal and Iron Co., Rockhill Gap, Cromwell Twp.
2280, (33,) Sandstone. Mines of Rockhill Coal and Iron Co., Rockhill Gap, Cromwell Twp.
2281, (34,) Fossil iron-ore. Opposite Lea's & McVitty's Tannery, Saltillo, Clay Twp.
2282A, (35A,) Fossil iron-ore. Ditto.
2282B, (35B,) Fossil iron-ore. Ditto.
2282C, (35C,) Fossil iron-ore. $\frac{1}{4}$ mile S. E. of Saltillo.
2283, (36,) Fossil-ore S. S. West flank of Jacks Mt., near Saltillo, Clay Twp.
2284, (37,) Fossil iron-ore. Mines of Rockhill Co.
2285, (38,) Fossil iron-ore. Mines of Rockhill Co.
2286, (39,) Olive shale. Mines of Rockhill Co.
2287, (40,) Olive shale. *Opp. Lea's & McVitty's Tannery.*
2288, (41,) Olive shale. " "
2289, (42,) Olive shale. " "
2290. (43,) Olive shale. " "
2291, (44,) Olive shale and L. S. " "
2292, (45,) Limestone. " "
2293, (46,) Olive shale. " "
2294, (47,) Olive shale. " "
2295, (48,) Olive shale. Near Three Springs.
2296, (49,) Olive shale and L. S. Near Three Springs.

2297, (50,) Llmestone. Near Three Springs.
2298, (51,) Olive shale. Rockhill Gap, Huntingdon Co.
2299, (52,) Red shaly S. S. 1200′ N. N. W. of Ashman's Grist mill, near Three Springs, Huntingdon Co.
2300A, (53a,) Fossil iron ore. Opposite Lea's & McVitty's.
2300B, (53b,) Fossil iron ore. Opposite Lea's & McVitty's.
2300C, (53c,) Fossil iron ore. 800′ N. E. of Benj. Swoope's barn, Saltillo, Clay township.
2300D, (53d,) Fossil iron ore. 800′ N. E. of Benj. Swoope's.
2300E, (53e,) Red shale. 500′ S. S. E. of Royer House at Saltillo.
2301, (54,) Red shale. 800′ N. W. from Ashman's grist mill, near Three Springs, Clay twp.
2302, (55,) Red shale. 800′ N. W. from Ashman's mill.
2303, (56,) Red shale. 800′ N. W. from Ashman's mill.
2304, (57,) Red shale. N. E. of P. P. Dewees' grist mill, Rockhill Gap, Huntingdon Co.
2305, (58,) Red shale. N. E. of P. P. Dewees' grist mill.
2306, (59,) Red shale. 500′ S. S. E. of Royer House, Saltillo, Clay twp., Huntingdon Co.
2307, (60,) Red shale. 500′ S. S. E. of Royer House.

Saliferous.

2308, (61,) Shale. 500′ S. S. E. of Royer House, Saltillo.
2309, (62,) Shale. 500′ S. S. E. of Royer House, Saltillo.
2310, (63,) Shale. 200′ S. S. E. of Royer House, Saltillo.
2311, (64,) Shale. 50′ S. S. E. of Royer House, Saltillo.
2312, (65,) Shale. Near Saltillo, Huntingdon Co.
2313, (66,) Shale. 250′ N. N. E. of Ashman's Grist mill.
2314, (67,) Shale. 250′ N. N. E. of Ashman's Grist mill.
2315, (68,) Shale. 150′ N. N. W. from P. P. Dewees' Grist mill, near Rockhill Gap, Cromwell Twp.
2316, (69,) Shale. 150′ N. N. W. from P. P. Dewees' mill.
2317, (70,) Shale. 150′ N. N. W. from P. P. Dewees' Grist mill.
2318, (71,) Shale. Near Ashman's Grist mill.
2319, (72,) Shale. Benj. Shope's water limestone quarry, Saltillo, Clay Twp., Huntingdon Co.

Water-Lime.

2320, (73,) Shale. 150′ N. N. W. from P. P. Dewees' Grist mill, near Rockhill Gap, Huntingdon Co.
2321, (74,) Limestone. 150′ N. N. W. from ditto.
2322, (75,) Shaly limestone. Near Ashman's Grist mill, Three Springs, Clay Twp., Huntingdon Co.
2323, (76,) Limestone and shale. B. Shope's quarry, Saltillo.
2324, (77,) Limestone and shale. Near Ashman's Grist mill.
2325, (78,) Limestone and shale. Near Ashman's Grist mill, Clay Twp., Huntingdon Co.
2326, (79,) Limestone and shale. West flank of Jacks mountain, 1 mile from Saltillo, Clay Twp., Huntingdon Co.
2327, (80,) L. Shale. West flank of Jacks mountain, ditto.
2328, (81,) Limestone. West flank of Jacks mountain, ditto.
2329, (82,) Slaty L. S. 1,000′ S. S. E. from C. R. McCarthy's limekiln, near Saltillo, Clay Twp.
2330, (83,) Limestone. R. Ashman's quarry, Three Springs.
2331, (84,) Lime shale. R. Ashman's quarry, Three Springs.
2332, (85,) Limestone. R. Ashman's quarry, Three Springs.
2333, (86,) Limestone. 250′ N. W. of P. P. Dewees' Grist mill.
2334, (87,) Limestone. 250′ N. W. of P. P. Dewees' Grist mill.
2335, (88,) Shale. 800′ S. S. E. of C. R. McCarthy's limekiln, Saltillo, Clay Twp., Huntingdon Co.
2336, (89,) Limestone. 800′ S. S. E. of C. R. McCarthy's ditto.
2337, (90,) Limestone. 800′ S. S. E. of C. R. McCarthy's ditto.
2338, (91,) Limestone. 800′ S. S. E. of C. R. McCarthy's ditto.
2339, (92) Limestone. 350′ N. W. from P. P. Dewees' grist mill, near Rockhill Gap, Huntingdon Co.
2340, (93,) Limestone. 600′ S. S. E. from McCarthy's limekiln, near Saltillo, Clay Twp., Huntingdon Co.

2341, (94,) Limestone. 600′ S. S. E. from McCarthy's lime-kiln.
2342, (95,) Limestone. Rockhill furnace water-lime quarry, near Orbisonia, Huntingdon Co.
2343, (96,) Calcite. Rockhill furnace water-L. S. quarry.
2344, (97,) Limestone. Rockhill furnace water-L. S. quarry.
2345, (98,) Limestone. Rockhill furnace water-L. S. quarry.
2346, (99,) Limestone. 400′ S. E. of C. R. McCarthy's lime-kiln, near Saltillo, Clay Twp.
2347, (100,) Limestone. T. E. Orbison's quarry, Orbisonia.
2348, (101,) Limestone. T. E. Orbison's quarry, Orbisonia.
2349, (102,) Limestone. T. E. Orbison's quarry, Orbisonia.
2350, (103,) Limestone. T. E. Orbison's quarry, Orbisonia.
2351, (104.) Limestone. T. E. Orbison's quarry, Orbisonia.

Lower Helderberg (*Lewistown L. S.*)

2352, (105,) Limestone. E. Hudson's quarry, Three Springs.
2353, (106,) Limestone. E. Hudson's quarry, Three Springs.
2354, (107,) Limestone. E. Hudson's quarry, Three Springs.
2355, (108,) Limestone. E. Hudson's quarry, Three Springs.
2356, (109,) Limestone. E. Hudson's quarry, Three Springs.
2357, (110,) Limestone. Sandy Ridge No. 2, near Orbisonia, Cromwell Twp., Huntingdon Co.
2358, (111,) Limestone. C. R. McCarthy's quarry, near Saltillo, Clay Twp.
2359, (112,) Limestone. C. R. McCarthy's.
2360, (113,) Limestone. Lewistown L. S. C. R. McCarthy's.
2361, (114,) Limestone. Lewistown L. S. Sandy Ridge No. 2, near Orbisonia.

Oriskany.

2362, (115,) Sandstone. Sandy Ridge No. 2, near Orbisonia.
2363, (116,) Sandstone conglomerate. Sandy Ridge No. 1.
2364, (117,) Sandstone. R. R. cut in front of Hudson's Hotel, Three Springs, Clay Twp., Huntingdon Co.
2365, (118,) Brown limonite. C. R. McCarthy's property, near Saltillo, Clay Twp., Huntingdon Co.
2366, (119,) Sandstone. Near Orbisonia, Cromwell Twp.

2367, (120,) Calcareous sandstone. End of Royer Ridge, near Orbisonia, Huntingdon Co.
2368, (121,) Sandstone. *R. R. cut in front of Hudson's Hotel, Three Springs.*
2369, (122,) Sandstone. " "
2370, (123,) Sandstone. " "
2371, (124,) Shale. " "

Upper Helderberg.

2372, (125.) Calcareous shale. *R. R. cut in front of Hudson's Hotel.*
2373, (126.) Calcareous shale. " "
2374, (127.) Calcareous shale. " "
2375, (128.) Calcareous shale. " "
2376, (129.) Calcareous shale. " "
2377, (130.) Calcareous shale. *R. R. cut in front of Hudson's Hotel.*
2378, (131.) Calcareous shale. " "
2379, (132.) Calcareous shale. " "
2380, (133,) Limestone. " "
2381, (134,) Limestone. Sandy Ridge No. 2, near Orbisonia, Cromwell Twp. Huntingdon Co.
2382, (135,) Shaly limestone. Quarry near R. R. bridge, Orbisonia.
2383, (136,) Shaly limestone. Quarry near R. R. bridge, Orbisonia.
2384, (137,) Shaly limestone. Sandy Ridge No. 1, near Orbisonia.

Marcellus.

2385, (138,) Limonite and carb. of iron. West flank of Royer Ridge, near Orbisonia.
2386, (139,) Limonite. Isaac Fleck's ore-bank, Cromwell Twp., Huntingdon Co.
2387, (140,) Limonite conglomerate. Hudson's ore-bank, Clay Twp., Huntingdon Co.
2388, (141,) Limonite. Hudson's ore-bank, Clay Twp., Huntingdon Co.

2389, (142,) Slate. E. B. T. R. R. cut, in front of Hudson's hotel.
2390, (143,) Slate. Three Springs, Clay Twp.
2391, (144,) Slate. Three Springs, Clay Twp.
2392, (145,) Slate. Line of E. B. T. R. R., 1 mile from Orbisonia, Cromwell Twp., Huntingdon Co.
2393, (146,) Slate. 900′ N. N. W. of G. W. Cohill's house, line of R. R., N. W. from Saltillo.
2394, (147,) Shaly limestone. Near I. Enyeart's house, line of E. B. T. R. R., 1 mile from Orbisonia.
2395, (148,) Limestone. Near I. Enyeart's house.

Hamilton.

2396, (149,) Sandstone. 1,000 ft. W. of road fork, near J. F. Meninger's, line of E. B. T. R. R., N. W. from Saltillo, Huntingdon Co.
2397, (150,) Sandstone. Aughwick creek, 1 mile from Orbisonia, 400′ N. E. from bridge.
2398, (151,) Sandstone. Aughwick Creek, ditto.
2399, (152,) Sandstone. Aughwick Creek, ditto.
2400, (153,) Sandstone. Aughwick Creek, ditto.
2041, (154,) Sandstone. Aughwick Creek, ditto.
2402, (155,) Sandstone *fossils*. 800′ S. E. of School-house, line of E. B. T. R. R., N. W. from Saltillo.

Genesee.

2403, (156,) Slate. 800′ S. E. of School-house, line of E. B. T. R. R., N. W. from Saltillo.
2404, (157,) Shale. 800′ S. E. of School-house.
2405, (158,) Shale. ¼ mile N. W. from Wm. Shue's house, Sideling Hill Creek, Clay Twp., Huntingdon Co.
2406, (159,) Sandstone. 500′ S. E. from School-house, line of E. B. T. R. R., N. W. from Saltillo.
2407, (160,) Sandstone. 500′ S. E. from School-house.
2408, (161,) Sandstone. 500′ S. E. from School-house.
2409, (162,) Sandstone. 500′ S. E. from School-house.

Portage.

2410, (163,) Shale. 400′ S. E. from School-house.

2411, (164,) Shale. South of School-house.
2412, (165,) Sandstone. 200′ west of School-house.
2413, (166,) Sandstone. 200′ west of School-house.
2414, (167,) Shale. 200′ west of School-house.
2415, (168,) Shale. 200′ west of School-house.
2416, (169,) Bog iron ore. H. R. Beer's meadow, Beersville, Cromwell Twp., Huntingdon Co.
2417, (170,) Sandstone. Line of E. B. T. R. R., S. of T., Skipper's house, N. W. from Saltillo, Huntingdon Co.
2418, (171,) Shale. Line of E. B. T. R. R., ditto.
2419, (172,) Sandstone. Line of E. B. T. R. R., ditto.

Chemung.

2420, (173,) Sandstone. 1,200′ S. E. of J. Gladfetter's house on Sideling Hill Creek, Clay Twp.
2421, (174,) Sandstone. 500′ N. W. from T. Skipper's.
2422, (175,) Shale. 700′ N. W. from T. Skippers house.
2423, (176,) Sandstone. Sandstone quarry on Aughwick creek, near Beersville, Huntingdon Co.
2424, (177,) Sandstone. Sandstone quarry ditto.
2425, (178,) Sandstone. Sandstone quarry ditto.
2426, (179,) Sandstone. *End of Clear Ridge, (R. R.,) N. W. from Saltillo.*
2427, (180.) Sandstone. " "
2428, (181.) Shale. " "
2429, (182.) Shale. " "
2430, (183.) Shale. " "
2431, (184.) Shale. " "
2432, (185,) Sandstone. " "
2433, (186,) Shale. " "
2434, (187,) Shale. " "
2435, (188,) Sandstone *fossils.* " "
2436, (189,) Sandstone. " "
2437, (190,) Sandstone. " "

Chemung VIII—IX Catskill.

2438, (191,) Sandstone. " "
2439, (192,) Sandstone. " "

2440, (193,) Sandstone. *End of Clear Ridge, (R. R.,) N. W. from Saltillo.*
2441, (194,) Sandstone. " "
2442, (195,) Sandstone. " "
2443, (196,) Sandstone. " "
2444, (197,) Sandstone. " "
2445, (198,) Sandstone. " "
2446, (199,) Sandstone. " "
2445, (200,) Sandstone. " "

Red Catskill.

2448, (201,) Sandstone. 250′ S. E. of W. Bergstresser's, Sideling Hill creek, Taylor T., Fulton Co.
2449, (202,) Shale. Smith's Valley, line of E. B. T. R. R., N. W. from Saltillo, Huntingdon Co.
2450, (203,) Sandstone. Smith's Valley, line of E. B. T. R.
2451, (204,) Sandstone. Smith's Valley, line of E. B. T. R. R.
2452, (205,) Sandstone. Wm. Smith's farm, near Mapleton, Union Twp., Huntingdon Co.
2453, (206,) Sandstone. Wm. Smith's farm, near Mapleton.
2454, (207,) Sandstone. R. R. cut, ½ m. S. W. from end of Clear Ridge, near Sideling Hill Tunnel.
2455, (208.) R. R. cut (E. B. T. R. R.,) ditto.
2456, (209,) Sandstone. R. R. cut ditto.
2457, (210,) Sandstone. R. R. cut ditto.
2458, (211,) Sandstone. ¾ mi. S. W. from end of Clear Ridge, Clay Twp.
2459, (212,) Sandstone. 1 mi. S. W. from ditto.
2460, (213,) Sandstone. 1 mi. S. W. from ditto.
2461, (214,) Sandstone. 1 mi. S. W. from ditto.
2462, (215,) Brown hematite. J. B. Moreland's farm—near Sideling Hill Tunnel, Clay Twp.
2463, (216,) Brown hematite. J. B. Moreland's.
2464, (217,) Sandstone. 350′ N. W. of M. E. church, Sideling Hill Gap, Taylor Twp., Fulton Co.
2465, (218.) R. R. cut, E. of Sideling Hill Tunnel.
2466, (219.) E. B. T. R. R., Clay Twp., Huntingdon Co.
2467, (220.) 3300′ S. E. of New Granada, Sideling Hill Gap, Taylor Twp., Fulton Co.

White Catskill.

2468, (221.) 3300′ S. E. of New Granada, Sideling Hill Gap, Taylor Twp., Fulton Co.
2469, (222,) 3300′ S. E. of New Granada, Sideling Hill Gap.
2470, (223.) 3300′ S. E. of New Granada, Sideling Hill Gap.
2471, (224,) Sandstone. R. R. cut, 1,200′ E. of ditto.
2472, (225,) " " "
2473, (226,) " " "
2474, (227,) " 3,000′ S. E. of New Granada.
2475, (228,) " R. R. cut, 350′ E. of Sideling tunnel.
2476, (229,) " " "
2477, (230,) Shale. East end of ditto.
2478, (231,) Sandstone. 2,000′ S. E. of New Granada.
2479, (232,) " " "
2480, (233,) Shale. Sideling Hill Tunnel.
2481, (234,) " 2,000′ S. E. of New Granada.
2482, (235,) " Sideling Hill Tunnel.
2483, (236,) " " "
2484, (237,) Sandstone. " "
2485, (238,) Shale. " "
2486, (239,) Sandstone. 2,000′ S. E. from New Granada.
2487, (240,) " " "
2488, (241,) " Sideling Hill Tunnel.
2489, (242,) Shale. " "
2490, (243,) Conglomerate " "
2491, (244,) Shale. " "
2492, (245,) " " "
2493, (246,) Sandstone. " "
2494, (247,) " " "
2495, (248,) " " "
2496, (249,) Shale. " "
2497, (250,) Conglomerate, " "
2498, (251,) Shale. " "
2499, (252,) Coal slate. West end of Sideling Hill Tunnel.
2500, (253,) Sandstone. " "
2501, (254,) " " "
2502, (255,) Coal. " "
2503, (256,) Sandstone. " "
2504, (257,) Coal. " "

2505, (258,) Coal. West end of Sideling Hill Tunnel.
2506, (259,) Sandstone. " "
2507, (260,) Pyrite. " "
2508, (261,) Sandstone. " "
2509, (262,) Coal. " "
2510, (263,) Sandstone. " "
2511, (264,) " " "
2512, (265,) " " "
2513, (266,) Coal. " "
2514, (267,) Sandstone. " "
2515, (268,) " " "
2516, (269,) " New Granada.
2517, (270,) " " "
2518, (271,) " " "

Carboniferous.

2519, (272,) Limestone. Limestone quarry, worked by Jno.
2520, (273,) Limestone. [Whitney, near Todd P. O.
2521, (274,) Limestone. New Granada, Sideling Hill Gap.
2522, (275,) Limestone. " "
2523, (276,) L. shale. Quarry worked by John Whitney.
2524, (277,) Sandstone. " "
2525, (278,) " " "
2526, (279,) " " "
2527, (280,) Shale. " "
2528, (281,) Limestone. New Granada.
2529, (282,) " " "
2530, (283,) Red shale. " "
2531, (284,) Sandstone. M. J. Martin tract, Wray's Hill.
2532, (285,) Shale. " [Tunnel.
2533, (286,) Sandstone. " "
2534, (287,) Shale. " "
2535, (288,) Brown hematite. " "
2536, (289,) Brown hematite. " "
2537, (290,) Sandstone. M. J. Martin tract, Rocky Ridge,
2538, (291,) Sandstone. [near Wray's Hill Tunnel.
2539, (292,) " " "
2540, (293,) " " "
2541, (294,) " " "

Conglomerate.

2542, (295,) M. J. Martin tract, Rocky Ridge, near Wray's Hill Tunnel.
2543, (296,) Conglomerate. " "
2544, (297,) " " "
2545, (298,) Sandstone. " "
2546, (299,) " " "
2547, (300,) " " "
2548, (301,) " " "
2549, (302,) *Sigillaria.* " "
2550, (303,) *Sigillaria.* " "
2551, (304,) Sandstone. " "
2552, (305,) " " "
2553, (306,) " " "

Lower Productive Coal Measures.

2554, (307,) Fire-clay (Black gravel, so called). Coal opening, S. of Robertsdale road to New Granada.
2555, (308,) Sandstone above coal seam of mine A.
2556, (309,) Fire-clay, below lower bench mine B. Ditto.
2557, (310,) Coal, lower bench of mine B. Ditto.
2558, (311,) Slate, between upper and lower benches. "
2559, (312,) Coal, upper bench, mine B. Ditto.
2560, (313,) Coal, lower bench, mine C, 2d room, 1st entry.
2561, (314,) Slate, parting of middle and lower benches.
2562, (315,) Coal, middle bench, mine C, ditto.
2563, (316,) Slate, separating upper and middle benches, mine C, ditto.
2564, (317,) Coal, upper bench, mine C, ditto.
2565, (318,) Coke, made in pit, from coal of mine C, ditto.
2566, (319,) Coke, made in Belgian oven, ditto.
2567, (320, Brown hematite, above coal of mine C, ditto.
2568, (321,) Coal, Alloway opening.
2569, (322,) Brown hematite. E. L. Anderson's tract, Trough creek basin, Carbon Twp.
2570, (323,) Coal. Curfman (Savage) opening.
2571, (324,) Coal. Petriken (Taylor) opening. Rocky Ridge, Todd Twp.
2572, (325,) Sandstone. Curfman (Savage) opening

2573-2778—WALTER A. FELLOWS—1876.

A Section through the Siluro-Cambrian Limestones of No. II, along the Little Juniata River, from Tyrone Gap to Spruce Creek Tunnel, Penna. R. R.

Trenton.

2573, (1,) Compact grayish black limestone. Nearhoff's quarry, Huntingdon Co.
2574, (2,) Limestone. 600′± above Tyrone forge.
2575, (3,) " 595′ "
2576, (4,) " 590′ "
2577, (5,) " 585′ "
2578, (6,) " 580′ "
2579, (7,) " 578′ "
2580, (8,) " 575′ "
2581, (9,) " 570′ "
2582, (10,) " 565′ "
2583, (11,) Black limestone with *Rhynchonella*. 560′ above Tyrone forge, in Huntingdon Co.
2584, (12,) Limestone. 555′ "
2585, (13,) " 550′ "
2586, (14,) " 540′ "
2587, (15,) " "
2588, (16,) " "
2589, (17,) " "
2590, (18,) " "
2591, (19,) " "
2592, (20,) " "
2593, (21,) " "

Calciferous, &c.

2594, (22,) Limestone (dolomite?) above Tyrone Forge.
2595, (23,) " " "
2596, (24,) " " "

2597, (25,) Limestone (dolomite?) above Tyrone Forge.
2598, (26,) " " "
2599, (27,) " " "
2600, (28,) " " "
2600, (29,) " " "
2601, (30,) " " "
2602, (31,) " " "
2602, (32,) " " "
2603, (33,) " " "
2604, (34,) " " "
2605, (35,) R. R. cut, P. R. R., below Little Juniata Railroad Bridge No. 12.
2606, (36,) " " "
2607, (37,) " " "
2608, (38,) " " "
2609, (39,) " " "
2610, (40,) " " "
2611, (41,) " " "
2612, (42,) " " "
2613, (43,) " " "
2613, (43½,) " " "
2614, (44,) " " "
2615, (45,) " " "
2616, (46,) " " "
2617, (47,) " " "
2618, (48,) " " "
2619, (49,) " " "
2620, (50,) " " "
2621, (51,) " " "
2622, (52,) " " "
2623, (53,) " " "
2624, (54,) " " "
2625, (55,) Pennsylvania railroad cut above Little Juniata Railroad Bridge No. 11.
2626, (56,) " " "
2627, (57,) " " "
2628, (58,) " " "
2629, (59,) " " "
2630, (60,) " " "
2631. (61.) " " "

2632, (62,) Limestone (dolomite?) On wagon road below Little Juniata Railroad Bridge No. 11.
2633, (63,) " " "
2634, (64,) " " "
2635, (65,) " " "
2636, (66,) " " "
2637, (67,) " " "
2638, (68,) " " "
2639, (69,) " " "
2640, (70,) " " "
2641, (71,) " " "
2642, (72,) " " "
2643, (73,) " " "
2644, (74,) " " "
2644, (75,) " " "
2645, (76,) " " "
2646, (77,) " " "
2647, (78,) " " "
2648, (80,) " Above covered bridge at Birmingham.
2649, (81,) " " "
2650, (82,) " " "
2651, (83,) " " "
2651, (84,) " " "
2651, (85,) " " "
2651, (86,) " " "

Potsdam (?)

2652, (87,) White, compact fine-grained sandstone. On River-road above Birmingham covered bridge, opposite Birmingham Lead and Zinc Works.
2652, (88,) Sandstone. " "
2653, (89,) " " "
2654, (90,) " " "
2654, (91,) " "
2655, (92,) " "
2655, (93,) " "
2656, (94,) " "
2657, (95,) Ferruginous sandstone, speckled with oxide of iron. " "

2657, (96,) Ferruginous sandstone, speckled with oxide of iron.
2657, (97,) " "
2657, (98,) " "
2658, (99,) " "
2658, (100,) " "
2659, (101,) " "
2659, (102,) " "
2659, (103,) " "
2660, (104,) " "
2661, (105,) Potsdam? Hard, gray sandstone. Below Birmingham covered bridge, opposite Birmingham R. R. station.

Dolomites and Limestone of No. II.

2662, (106,) Shaly limestone, containing much carbonaceous matter. Below Birmingham covered bridge, opposite Birmingham R. R. station.
2662, (107,) " "
2662, (108,) " "
2662, (109,) " "
2662, (110,) " "
2663, (111,) " "
2663, (112,) " "
2664A, (96A,) Dolomite with irregularly distributed veins of calcite. S. side of Little Juniata River, along P. R. R. below Sub-Div. shanty (near Birmingham Sta.,) and opposite S. S. exposure on N. side of river.
2665A, (97A,) " "
2666A, (98A,) " "
2667A, (99A,) " "
2664, (113,) Below Birmingham Station, P. R. R.
2665, (114,) " "
2666, (115,) " "
2667, (116,) " "
2668, (117,) " "
2669, (118,) " "
2670, (119,) " "

2671, (120,) Below Birmingham Station, P. R. R.
2672, (121,) " "
2673, (122,) " "
2674, (123,) " "
2675, (124,) " "
2676, (125,) " "
2677, (126,) " "
2678, (127,) " "
2679, (128,) " "
2680, (129,) At Little Juniata Bridge No. 10, P. R. R.
2681, (130,) Below Bridge No. 10.
2682, (131,) " "
2683, (132,) " "
2684, (133,) " "
2685, (134,) " "
2686, (135,) " "
2687, (136,) " "
2688, (137,) " "
2689, (138,) Below Little Juniata Bridge No. 9, P. R. R.
2690, (139,) " "
2691, (140,) " "
2691, (141,) " "
2692, (142,) " "
2693, (143,) " "
2693, (144,) " "
2694, (145,) " "
2695, (146,) " "
2695, (147,) " "
2696, (148,) " "
2697, (149,) " "
2697, (150,) Below Bridge No. 8, Penna. R. R. track.
2697, (151,) " " "
2698, (152,) " " "
2699, (153,) " " "
2699, (154,) " " "
2700, (155,) " " Limestone quarry
2700, (156,) " " "
2701, (157,) " " "
2702, (158,) " " "

2702, (159,)	Below Bridge No. 8.	Limestone quarry.	
2703, (160,)	"	"	
2704, (161,)	"	"	
2705, (162,)	"	"	
2706, (163,)	"	"	
2707, (164,)	"	"	
2708, (165,)	"	"	
2709, (166,)	"	"	
2710, (167,)	"	"	
2711, (168,)	"	"	
2712, (169,)	"	"	
2713, (170,)	"	"	
2714, (171,)	"	"	
2715, (172,)	Below Little Juniata Bridge No. 7.		P. R. R.
2716, (173,)	"	"	"
2717, (174,)	"	"	"
2718, (175,)	"	"	"
2719, (176,)	Below Little Juniata Bridge No. 6.		P. R. R.
2720, (177,)	"	"	"
2721, (178,)	"	"	"
2722, (179,)	"	"	"
2723, (180,)	"	"	"
2724, (181,)	"	"	"
2725, (182,)	"	"	"
2726, (183,)	"	"	"
2726, (184,)	From large quarry.	"	"
2726, (185,)	"	"	"
2727, (186,)	Below Little Juniata Bridge No. 5,		P. R. R.
2728, (187,)	"	"	
2729, (188,)	"	"	
2730, (189,)	"	"	
2731, (190,)	"	"	
2732, (191,)	"	"	
2733, (192,)	"	"	
2734, (193,)	Below Little Juniata Bridge No. 4,		P. R. R.
2735, (194,)	"		"
2735, (195,)	"		"
2736, (196,)	"		"
2737, (197,)	"		"

2738, (198,) Below Little Juniata Bride No. 4. P. R. R.
2739, (199,) " "
2740, (200,) " "
2741, (201,) " "
2742, (202,) " "
2743, (203,) " "
2744, (204,) Below Little Juniata Bridge No. 3, P. R. R.
2745, (205,) " "
2746, (206,) " "
2747, (207,) " "
2748, (208,) " "
2749, (209,) Below Little Juniata Bridge No. 2, P. R. R.
2750, (210,) " "
2751, (211,) Below Little Juniata Bridge No. 1, P. R. R.
2752, (212,) " "
2753, (213,) " "
2754, (214,) Below Engine House, at Spruce Creek Station.
2755, (215,) " "
2756, (216,) " "
2757, (217,) " "
2758, (218,) " "
2759, (219,) " "
2760, (220,) " "
2761, (221,) " "
2762, (222,) " "
2763, (223,) " "
2764, (224,) " "
2764, (225,) " "
2765, (226,) " "
2766, (227,) " "
2767, (228,) " "
2768, (229,) " "
2769, (230,) " "
2769, (231,) " "
2770, (232,) " "
2771, (233,) " "
2772, (234,) " "
2773, (235,) " "
2774, (236,) " "

2775, (237,) Below Engine House, at Spruce Creek Station.
2776, (238,) " "
2777, (239,) " "
2778, (240,) Lime kiln near Spruce Creek Tunnel, P. R. R.

J. F. CARLL'S COLLECTION OF 1875.

Diagram, showing the relative positions of the Specimens collected.

The numbers here given are field numbers.

<table>
<tr><td colspan="3">1st Division.
Nos. 175 to 253.</td><td>200′</td><td colspan="2">Above the 2d Mountain Sand.</td></tr>
<tr><td colspan="3">2d Division.
Nos. 254 to 302.</td><td>60′</td><td colspan="2">2d Mountain Sand.
Garland Conglomerate.</td></tr>
<tr><td rowspan="6">7th Division.</td><td rowspan="2">Nos. 430 to 432.</td><td>3d Division.
Nos. 303 to 353.</td><td>200′</td><td>Cuyahoga Shale.</td><td rowspan="5">8th Division.
Nos. 446 to 462.</td></tr>
<tr><td>4th Division.
Nos. 354–364.</td><td>60′</td><td>Berea Grit.</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">Nos. 365–401.
5th Division.
Nos. 402–405.</td><td>70′</td><td>Bedford Shale.</td></tr>
<tr><td>60′</td><td>Cleveland Shale.</td></tr>
<tr><td>Nos. 433 to 440.</td><td>6th Division.
Nos. 406 to 426.</td><td>350′</td><td colspan="2">Oil Group.</td></tr>
<tr><td>Nos. 441–445.</td><td>Nos. 426–429.</td><td>50′</td><td colspan="2">Below Oil Group.</td></tr>
</table>

2779-3062—JOHN F. CARLL—1874.

2779, (1,) White sandstone. In place. River Hill, Tionesta road, Forest Co., Pa. 1734 above tide.
2780, (1,) Sandstone. Loose. River Hill, Tionesta road.
2781, (1,) Sandstone. Loose. River Hill, Tionesta road.
2782, (2,) Yellowish-brown sandstone. Loose. Bishop Hill, 4½ miles S. 20° E. from Pleasantville, Pa. 1717 above tide.
2783, (3,) Argillaceous sandstone. Loose. Bishop Hill.
2784, (4,) Argillaceous sandstone. Loose. Bishop Hill.
2785, (4,) Argillaceous sandstone. Loose. Bishop Hill.
2786, (5,) Gray sandstone. Loose. Ennis Hill, Pleasantville, Pa. 1713 above tide.
2787, (6,) Yellow sandstone. Loose. Ennis Hill.
2788, (7,) Reddish gray sandstone. Loose. Ennis Hill.
2789, (8,) Reddish gray sandstone. Loose. Ennis Hill.
2790, (9,) Reddish gray sandstone. *Lepedodendron.* Loose. Ennis Hill.
2791, (10,) Reddish brown sandstone. Loose. Ennis Hill, Pleasantville, Pa. 1713 above tide.
2792, (11,) Yellowish brown sandstone. *Syringodendron.* Loose. Diditto.
Hill, Pleasantville, Pa. 1713 above tide.
2793, (12,) Light red sandstone. *Calamites.* Loose. Ennis Hill.
2794, (13,) Light red sandstone. Loose. Ennis Hill.
2795, (14,) Yellowish brown sandstone. *Sigillaria.* Loose. Ditto.
2796, (15,) Gray sandstone. *Ctenacanthus.* Loose. Ennis Hill.
2797, (16,) Reddish brown S. S. stained with iron. *orthoceras.* Loose. Ennis Hill, Pleasantville, Pa. 1713 above tide.
2798, (17,) Sandstone. *Lepidodendron.* In place. Brummagen farm, 3½ miles S. 33° W. from Pleasantville, Pa. 1703 above tide.

NOTE.—The figures indicating *above tide* in feet are calculated for Pleasantville.

2799, (18,) Argillaceous sandstone. (Conductor,) in place. Ennis Hill, Pleasantville. 1693 above tide.
2800, (18,) Yellow-gray sandstone, shaly. *Fern stems.* Ditto.
2801, (18,) Argillaceous sandstone. Ditto.
2802, (18,) Yellowish gray sandstone. *Fern stems.*
2803, (19,) Gray argillaceous sandstone. In place. Collins' tract, Pleasantville. 1673′ above tide.
2804, (19,) Gray argillaceous sandstone. *Lepidodendron.* In place.
2805, (19,) Gray argillaceous sandstone. In place. Ditto.
2806, (19,) Grayish-white micaceous sandstone. Ditto.
2807, (19,) Grayish-white micaceous sandstone. Ditto.
2808, (20,) Argillaceous sandstone. In place. Collins' tract, Pleasantville. 1670′ above tide.
2809, (20,) Argillaceous sandstone. In place. Ditto.
2810, (20,) Argillaceous sandstone. In place. Ditto.
2811, (20,) Clay concretion. In place. Ditto.
2812, (20,) Hematite. In place. Collins' tract, ditto.
2813, (20,) Calcareous sandstone. In place. Ditto.
2814, (21,) Fire-clay. In place. Bogue farm, Franklin & Warren turnpike, 5½ miles S. 27° W. from Pleasantville, Pa. 1668′ above tide.
2815, (22,) Bony coal. In place. Eagle farm, Cornplanter Twp., 5½ miles S. 27° W. of Pleasantville. 1668′ above tide.
2816, (22,) Bony coal. In place. Eagle farm, ditto.
2817, 2818, 2819, 2820, (23,) Gray-black slate. In place. Harsh-well, Cashup, 4½ miles S. 15° E. from Pleasantville, Penna. 1662 above tide.
2821, (24,) Fire-clay. In place. Harsh-well, ditto.
2822, 2823, 2824, (24,) Yellowish-brown calcareous sandstone. In place. Harsh-well, Cashup, 4½ miles S. 15° E. from Pleasantville, Penna. 1641 above tide.
2825, (24,) Limonite. In place. Harsh-well, ditto.

2826, (25,) Compact silicious sandstone surfaces black from carbonaceous coating. *Stigmaria.* McKissick coal bank, 5¼ miles S. 10° E. from Pleasantville, Pa. 1661 above tide.

2827, (25,) Limonite and carbonate of iron. Ditto.

2828, (25,) Limonite. McKissick coal bank.

2829, (25,) Bony coal. McKissick coal bank.

2830, (25,) Bony coal. McKissick coal bank.

2831, (25,) Bony coal. McKissick coal bank.

2832, (26,) Argillaceous shale. *Stigmaria.* In place. Brown Bro.'s tract, Pleasantville. 1645 above tide.

2833, (26,) Argillaceous shale. *Stigmaria.* Brown Bro.'s tract.

2834, (27,) Reddish brown argillaceous S. S. *Bornia.* Loose. Brown Bro.'s tract, Pleasantville. 1645 above tide.

2835, (28,) Light-gray sandstone. In place. Armstrong farm, 1 mile S. 40° W. from Pleasantville, Pa. 1641 above tide.

2836, (28,) Black micaceous shale with bands of white S. S. *Cordaites.* In place. Armstrong farm.

2837, (29,) Fire-clay. *Stigmaria.* In place. Brown Bro.'s tract, Pleasantville. 1640 above tide.

2838, (30,) Yellowish-white sandstone. *Stigmaria.* In place. Tyrrel Hill Twp., near "Plank Road," 1¾ miles S. 20° E. of Pleasantville. 1660 above tide.

2839, (30,) Yellowish-white sandstone. *Stigmaria.* In place. Ditto.

2840, (31,) White sandstone. Surfaces weathered to yellowish-brown. *Fucoides.* Loose. Cattaraugus Hill, 1½ miles N. 60° E. from Pleasantville, Pa. 1638 above tide.

2841, (32,) Compact sandstone. *Stigmaria.* Loose. Cattaraugus Hill. Ditto.

2842, (33,) Compact sandstone. *Stigmaria.* Loose. Cattaraugus Hill. Ditto.

2843, (35,) Yellowish-brown sandstone. Loose. Near Holbrook well, 1¾ miles S. 50° W. from Pleasantville, Pa. 1567 above tide.

2844, (36,) Coarse, friable, yellowish-brown sandstone. Plant stems. In place. Carll Farm, 1¾ miles S. 60° W. from Pleasantville. 1636 above tide.

2845, (37,) Coarse, yellow-brown sandstone. In place. Carll Farm, ditto.

2846, (38,) Coarse yellow sandstone. Plant stems. Loose. Carll Farm, ditto.

2847, (38,) Coarse, yellow S. S. Plant stems. Loose. Carll farm. 1636 above tide.

2848, (39,) Gray, micaceous sandstone. *Cordaites.* Loose. Carll farm.

2849, (39,) Hard, fine-grained, gray-white S. S. Loose. "

2850, (39,) Hard, fine-grained, gray-white S. S. Loose. "

2851, (40,) Coarse, gray sandstone. Loose. Curtis farm. ¾ m. N. 10° E. of Pleasantville. 1607 above tide.

2852, (40,) Coarse brown sandstone. Loose. Ditto.

2853, (41,) Gray sandstone. *Sphenopteris.* In place. Carll farm.

2854, (42,) Compact white S. S. *Stigmaria.* In place. Carll farm. 1631 above tide.

2855, (42,) Compact white S. S. *Stigmaria.* Ditto.

2856, (43,) Coarse yellowish-brown sandstone. In place. E. E. Clapp farm, near well No. 36, 7 m. N. E. of Pleasantville, Warren Co., Pa. 1602 above tide.

2857, (44,) Yellowish-gray sandstone. In clay. Hebert tract (borough), ½ m. S. 25° W. of Pleasantville. 1629 above tide.

2858, (45,) Yellowish-gray sandstone. *Ctenacanthus.* Loose. Skinner farm, 1¼ m. N. W. Pleasantville. 1620 above tide.

2859, (46,) Reddish-gray sandstone. *Stigmaria.* Loose. Skinner farm.

2860, (47,) Yellow and red sandstone. Loose. Newkirk farm, ¾ m. N. 10° E. of Pleasantville. 1627 above tide.

2861, (48,) Grayish-green flaggy sandstone. Loose. Shamburg road near Bendict Run, 1¼ S. 65° W. of Pleasantville. 1618′.

2862, (49,) Argillaceous sand-shale. Loose. Ditto.

2863, (50,) Grayish-brown S. S., with algae. In place(?). Johnson farm, $5\frac{1}{4}$ m. S. 25° E. of Pleasantville. 1582 above tide.

2864, (51,) Grayish-blue, micaceous, flaggy S. S. In place. Dunham farm, $1\frac{1}{2}$ m. S. 50° E. of Pleasantville. 1583 above tide.

2865, (51,) Coarse, hard, calcareous rock with pebbles. In place. Dunham farm. 1583 above tide.

2866, (51,) Coarse, hard, calcareous rock with pebbles finer than above. In place. Dunham farm.

2867, (51,) Gray conglomeritic S. S. In place. Ditto.

2868, (51,) Gray sandstone. In place. Dunham farm.

2869, (51,) Gray sandstone. In place. Dunham farm.

2870, (51,) Brown, conglom. ferruginous S. S. In place. Dunham farm. 1583 above tide.

2871, (51,) Brown, ferruginous shaly S. S. In place. Dunham farm. 1583 above tide.

2872, (51,) Coarse, bluish-gray argillaceous sandstone. In place. Dunham farm. 1583 above tide.

2873, (52,) Blue sandshale. In place, (from water well.) McClune farm, $1\frac{1}{2}$ m. N. 52° E. of Pleasantville. 1580 above tide.

2874, (53,) Argillaceous sandstone. Pit Hole, (from conductor.) Rooker farm, 5 m. S. of Pleasantville. 1583 above tide.

2875, (54,) Clay and argillaceous S. S., (calamites.) In place. Haskell well, 20 yards E. from 2874.

2876, (54,) Gray sandy shale. *Palaeopteris.* In place. Haskell well.

2877, (54,) Gray sandy shale. *Palaeopteris.* In place. Haskell well.

2878, (54,) Reddish brown sandy shale. *Plants.* In place. Haskell.

2879, (55,) Greenish gray sand shale. *Palaeopteris.* In place. Holbrook farm, R. R. grade, $1\frac{3}{4}$ m. S. 50° W. of Pleasantville. 1572′.

2880, (55,) Sandy shale. *Buthotrephis.* In place. Holbrook farm, ditto.

2881, (55,) Greenish gray shale, plant impressions. In place. Holbrook farm, ditto.
2882, (55,) Shaly sandstone. *Cordaites.* In place. Ditto.
2883, (55,) Yellowish gray flaggy sandstone. *Calamites.* In place. Holbrook farm, R. R. grade.
2884, (55,) Sandy shale with ripple marks. In place. Ditto.
2885, (55,) Grayish green sandy shale. Ripple marks. In place.
2886, (55,) Grayish green sandy shale. In place. Ditto.
2887, (55,) Grayish green sandy shale. *Palaeopteris.* In place. Ditto.
2888, (55,) Grayish green sandy shale. In place. Ditto.
2889, (55,) Sandy shale. In place. Ditto.
2890, (56,) Gray sandstone. Loose. Lockwood farm. 1570′.
2891, (57,) Yellowish brown sandstone. Loose. Ditto.
2892, (58,) Coarse micaceous S. S. *Palaeopteris.* In place. J. Clapp farm, "Triumph," Warren Co. 1558′.
2893, (59,) Coarse gray conglomerate. In place. Fagundus, Warren Co., Pa. 1560 above tide.
2894, (59,) Coarse gray conglomerate. In place. Ditto.
2895, (59,) Conglomeritic sandstone. *Cordaites.* In place. Ditto.
2896, (59,) White conglomerate of small irregular quartz fragments. In place. Fagundus, ditto.
2897, (59,) Coarse conglomerate. In place. Ditto.
2898, (60,) White S. S., casts of. In place. Ditto.
2899, (61,) White S. S., casts of. In place. Ditto.
2900, (62,) Greenish-brown flaggy S. S. *Fucoids.* In place. East slope, Cattaraugus Hill. 1550′.
2901, (63,) Mottled green and gray-yellow argillaceous S. S. In place. East slope, Cattaraugus Hill.
2902, (64,) Grayish-green flaggy sandstone. *Fucoids.* In place. Ditto.
2903, (65,) Yellow-brown S. S. with algae. In place. "
2904, (66,) Yellow argillaceous S. S. *Productus.* In place. Plank road towards Pit Hole, 3½ m. S. 25° E. of Pleasantville. 1538′.
2905, (67,) Calcareous sand rock. In place (?). West slope, Neilltown hill. 3 m. N., 80° E. of Pleasantville. 1545 above tide.

2906, (68,) Shaly sandstone. In place. West slope.
2907, (69,) Shaly sandstone. *Productus.* In place. "
2908, (70,) Sandstone, (algae.) In place. West slope, "
2909, (71,) Shaly S. S., *Streptorhynchus.* In place. West slope, Neilltown hill. 1545 above tide.
2910, (72,) Gray-green shaly sandstone. In place. "
2911, (74,) Gray-green shaly sandstone. In place. "
2912, (75,) Yellow-green sandy shale. *Algae.* In place. West slope, Neilltown hill. 1545 above tide.
2913, (76,) Argillaceous sandstone. In place (?). Dawson Farm, Stewart's Run. $5\frac{3}{4}$ m. S. 35° E. of Pleasantville. 1528 above tide.
2914, (77,) Grayish-green sandy shale. In place. Ditto.
2915, (78,) Yellow-gray S. S., *Streptorhynchus.* In place. Curtis Farm. 1544 above tide.
2916, (78,) Yellow-gray S. S., *Streptorhynchus.* "
2917, (79,) Greenish-gray S. S., (with ripple marks.) Loose, probably same band as No. 2916. Dunham Run, E. of Curtis Farm.
2918, (80,) Yellow argillaceous S. S. Loose. Curtis Farm. 1545 above tide.
2919, (81,) Green-gray S. S., with ripple marks. In place, Pit Hole, (from conductor.) Rooker Farm, 5 m. S. of Pleasantville. 1530 above tide.
2920, (81,) Green-gray S. S., *Rhynchonella.* In place. Rooker Farm. 1523 above tide.
2921, (82,) Gray-green S. S., with cast of *Productus.* In place (?). President road near Hyner's. S. M. S. of Pleasantville. 1523′.
2922, (83,) Yellowish S. S. In place (?). President road near Hyner's. 1523 above tide.
2923, (84,) Coarse, friable, yellow-brown S. S. In place (?). Joy tract, "Colorado," Warren County. 1542′
2924, (85,) Coarse, friable, yellow-brown S. S. In place. Ware farm, Warren County. 1525 above tide.
2925, (85,) Gray sandstone, *Calamite.* Ware farm.
2926, (86,) Gray sandstone, with plant impressions. In place, Ware farm, Warren County.

2927, (87,) Coarse S. S. with (plant impressions). In place. Ware farm, Warren County. 1525 above tide.
2928, (88,) Reddish-brown S. S. with *Lepidodendron.* In place. Ware farm, Warren County.
2929, (89,) S. S. In place. Ditto.
2930, (90,) Coarse white S. S. *Bornta.* In place. Ditto.
2931, (91,) Yellow-brown S. S. *Cordaites, Stigmaria.* In place. Farren farm, "Colorado," Warren County. 1516′.
2932, (92,) Red-brown S. S. Loose. Widow Beach farm, Church run, Crawford Co. 1517 above tide.
2933, (94,) Yellow-brown S. S. calamites, &c. Ditto.
2934, (95,) Shale plant impressions. Loose. Henderson farm, Warren County. 1522 above tide.
2935, (96,) Gray S. S. *Calamites.*. Loose. Parker farm, hill, Crawford County. 1498a bove tide.
2936, (97,) Yellow argillaceous sandstone plants impressions. In place. Parker farm, hill.
2937, (98,) Yellow S. S. Loose. Enterprise road, Curtis farm. 1495 above tide.
2838, (98,) Yellowish-white S. S., *Lepidodendron.* Enterprise road, Curtis farm.
2939, (99,) Red shale. In place. Magnolia lease, Ware farm, from conductor. 1492 above tide.
2940, (99,) Gray-green sandstone. Magnolia lease, Ware farm, from conductor.
2941, (100,) Yellow S. S. *Ctenacanthus.* Loose. Curtis farm. 1464 above tide.
2942, (101,) Gray S. S. In place. S. Q. Brown's, upper part McGee Run. 1489 above tide.
2943, (101,) Gray S. S. *Algae.* S. Q. Brown's, ditto.
2944, (101,) Grayish-green sandy shale. S. Q. Brown's.
2945, (102,) Gray S. S. *Algae.* Loose. Henderson farm, Warren County. 1485 above tide.
2946, (102,) Gray S. S. *Streptorhynchus.*
2947, (103,) Gray shaly S. S. In place. Buckham lease, Ironi farm, Warren Co. 1484 above tide.
2948, (104,) S. S. plant impressions. In place. Rooker farm, from conductor, Pit Hole. 1478′.

2949, (105,) Yellow gray shaly S. S. In place. Rooker farm, from conductor, Pit Hole. 1478.
2950, (105,) Yellow-gray shaly S. S. Rooker farm, "
2951, (105,) Green argillaceous S. shale with *algae*. "
2952, (105,) Gray S. S.—ripple marks. Rooker farm, "
2953, (106,) Gray-brown shaly S. S. Loose. Tionesta Hill, Forest County. 1459 above tide.
2954, (107,) Sandstone. In place.(?) North side of Church Run, Crawford Co., Pa. 1432 above tide.
2955, (109,) Sandstone, *fish* remains. Loose. Enterprise Road, Curtis Farm. 1384 above tide.
2956, (110,) Greenish gray S. S. In place. New London, Warren Co., Pa. 1380 above tide.
2957, (110,) Grayish S. S. with *productus*. In place. "
2958, (112,) Sandstone. Loose. Farren farm, "Colorado," Warren Co., Pa. 1379 above tide.
2959, (113,) Gray S. S. Loose. Farren farm, " "
2960, (114,) Gray shaly sandstone, *Fucoids*. Loose. Farren farm, "Colorado," Warren Co., Pa. 1334 above tide.
2961, (115,) Gray shaly sandstone, *Fucoids*. Ditto.
2962, (116,) Gray sand shale. Loose. Farren farm, "Colorado," Warren Co., Pa. 1334′.
2963, (118,) Yellow sandstone. Loose. McGee Run. 1321′.
2964, (119,) Gray sandstone, plant impressions. Loose. McGee Run. 1321 above tide.
2965, (120,) Greenish gray shale. Loose. Ditto.
2966, (121,) Greenish gray shale. Loose. Ditto.
2967, (122,) S. Stone, fish-spines(?). Loose. Ditto.
2968, (123,) Gray sandstone. Loose. McGee Run. Ditto.
2969, (124,) Gray sandstone. Loose. McGee Run. Ditto.
2970, (125,) Brown shaly sandstone. Loose. Ditto.
2971, (126,) Gray sandstone. Loose. Parker farm Hill, Crawford Co., Pa. 1290 above tide.
2972, (127,) Greenish gray micaceous S. S. In place. (?) Garland, inclined R. R. 1294 above tide.
2973, (128,) Yellowish-gray S. S. In place. Dennis Run, "Triumph," Warren Co., Pa. 1257′.

2974, (129,) Yellow sandstone, *Spirifer*. In place. Trunkeyville road, Fagundus, Forest Co., Pa. 1236 above tide.
2975, (129,) Yellow sandstone. *Spirifer*. In place. Trunkeyville road, ditto.
2976, (230,) Gray S. S. In place. Ditto.
2977, (131,) Gray S. S. In place. Ditto.
2978, (132,) Great conglomerate. Loose. Point between Dingley and Dennis Runs, Warren Co., Pa. 1308 above tide.
2979, (133,) Gray sh. Loose. Near Bunker Hill Mills, Parker farm, Crawford. 1170 above tide.
2980, (134,) Gray S. S. Loose. Miller farm. 1165′.
2981, (134,) Gray S. S. Miller farm.
2982, (134,) Gray S. S. Miller farm.
2983, (135,) Gray arg. S. S. spirifer. In place. Pine creek front old bridge. 1158 above tide.
2984, (135,) Gray arg. S. S. *Spirifer*. In place. Ditto.
2985, (136,) Gray sandy shale. *Orthis*. In place. Ditto. 1156′ above tide.
2986, (136,) Gray sandshale. *Orthis*. In place. Ditto.
2987, (137,) Blue shale. In place. Hunter Mill, Tionesta. 1154 above tide.
2988, (138,) Yellow-gray S. S. Loose. River bed, Tionesta. 1139 above tide.
2989, (139,) Gray S. S. In place. Pine Creek bridge. 1133′ above tide.
2990, (140,) Gray S. S. In place. Pine Creek bridge.
2991, (141,) Gray S. S. Pine Creek bridge.
2992, (142,) Gray S. S. iron stained. In place. Pine Creek bridge. 1133 above tide.
2993, (145,) Greenish-gray S. S. In place. Ditto.
2994, (146,) Gray S. S. *Fucoids*. In place. Ditto.
2995, (147,) Gray-green sandy shale. In place. Ditto.
2996, (147,) Gray S. S. *Spirifer*. In place. Ditto. 1131.
2997, (148,) Shaly sandstone. In place. Ditto.
2998, (148,) Sandstone. In place. Ditto.
2999, (149,) Gray S. S. In place. Ditto.
3000, (149,) Gray-green S. S. *Orthis*. Ditto.

3001, (149,) Gray-brown shaly S. S. In place. Pine Creek bridge. 1133 above tide.
3002, (149,) Blue-gray S. S. In place. Ditto.
3003, (149,) Gray sh., S. S. In place. Ditto.
3004, (150,) Gray-brown S. rock; algæ. In place. Ditto.
3005, (151,) Sandstone and sandy shale. *Fucoides.* In place (?). Point between Pine and Oil Creeks. 1131 above tide.
3006, (151,) Sandstone and sandy shale. *Fucoids.* In place. Point ditto.
3007, (151,) Sandstone and sandy shale. *Fucoids.* In place. Point ditto.
3008, (151,) Sandstone and sandy shale. *Fucoids.* In place. Point ditto.
3009, (151,) Sandstone and sandy shale. *Fucoids.* In place. Point ditto.
3010, (151,) Sandstone and sandy shale. *Fucoids.* In place. Point ditto.
3011, (151,) Sandstone and sandy shale. *Fucoids.* In place. Point ditto.
3012, (151,) Sandstone and sandy shale. *Fucoids.* In place. Point ditto.
3013, (151,) Sandstone and sandy shale. *Fucoids.* In place. Point ditto.
3014, (151,) Sandstone and sandy shale. *Fucoids.* In place. Point ditto.
3015 (152,) Grayish-green sandy shale. In place (?). Point on Pine Creek R. R. cutting. 1131 above tide.
3016, (153,) Grayish-green sandy shale. In place. A point 4½ miles N. 70° W. of Pleasantville, on Pine Creek R. R. cutting. 1131 above tide.
3017, (154,) Gray sandy shale. In place. Ditto.
3018, (155,) Gray sandy. "*spirifer.*" In place. Ditto.
3019, (156,) Gray sandy shale. In place. Ditto.
3020, (157,) Gray-brown, S. Stone. In place. Ditto.
3021, (158,) Gray-green shaly sandstone. In place. Pine Creek near Mill. 1140 above tide.
3022, (158,) Gray-green shaly sandstone. In place. Ditto.
3023, (158,) Gray-green shaly sandstone. In place. Ditto.

3024, (159,) Gray-green S. S., with *fucoids*. Loose. Hosmer Run, near mill, Hosmer Oil Co. 1133 above tide.

3025, (160,) Gray sandstone. Loose. Dennis Run, above Keystone Mill, Warren Co. 1064 above tide.

3026, (160,) Gray-green sandstone. Loose. Ditto.

3027, (161,) Grayish S. S. with casts and impressions of *spirifer*. In place. Garland, Warren Co. 1043 above tide.

3028, (161,) Grayish S. S. Garland, Warren Co.

3029, (162,) Gray-green micaceous S. S., *spirifer*. Loose. Dennis Run, Warren Co. 988 above tide.

3030, (163,) Gray-green sandstone, *fucoids*. Loose. Do.

3031, (164,) Gray sandstone, *spirifer*. Farrel farm, ("Red-hot.")

3032, (165,) Yellow sandstone. Nettleton Run, near "Enterprise," 2 m. N. of Pleasantville.

3033, (166,) Sandstone with *sigillaria*. Plank road; minor tract.

3034, (168,) Sandstone. McCaslen & West pit, Hole Creek.

3035, (168,) Sandstone. " "

3036, (169,) Brown sandstone with *plant* impressions. Tubbs farm.

3037, (170,) Yellowish-gray sandstone. Tubbs farm, Warren County.

3038, (171,) Sandstone with *spirifer*, &c. Grandin farm, 2 m. N. of Pleasantville.

3039, (172,) Gray S. S. In drift. King farm, $2\frac{1}{4}$ m. N. of Pleasantville.

3040, (172,) Greenish-gray S. S. In drift. Ditto.

3041, (173,) Greenish-gray S. S. In drift. South side of Pine Creek, near Oil Creek, 4 miles N. 70° W. of Pleasantville.

3042, (173,) Waterworn. In drift. South side of Pine Creek, ditto.

3043, (173,) Gray limestone *spirifer*. In drift. Ditto.

3044, (173,) Gray limestone *spirifer*, &c. In drift. Ditto.

3045, (173,) Yellowish-gray S. S. *productus*, &c. In drift. South side of Pine Creek, near Oil Creek.

3046, (173,) Gray-green shale *fucoids*. In drift. Ditto.
3047, (173,) Gray limestone. In drift. Ditto.
3048, (173,) Brown sandy shale, with *spirifer*, *rhynchonella*, *productus*, &c. In drift. Ditto.
3049, (173,) Sandstone, weathered, or water worn. In drift. Ditto.
3050, (173,) Sand, cemented. In drift. Ditto.
3051, (173,) Gneiss. In drift. Ditto.
3052, (173,) Drift, conglomerate. Ditto.
3053, (173,) Gneiss. In drift. Ditto.
3054, (173,) Mass of pebbles cemented with carbonate of lime. Drift. South side of Pine Creek.
3055, (173,) Greenish-gray sandstone. In drift. Ditto.
3056, (173,) Limestone, coral, (*Favosites.*) In drift. Ditto.
3057, (173,) Grayish brown conglom. S. S., *Fossils*. In drift. South side of Pine Creek, ditto.
3058, (173,) Garnetiferous gneiss. In drift. South side of Pine Creek, near Oil Creek.
3059, (173,) Pebble of limestone. In drift. Ditto.
3060, (173,) Garnetiferous gneiss. Drift. Ditto.
3061, (173,) Brown sandstone *chonetes*. Drift. Ditto.
3062, (174,) Gray sandstone. Loose. President road, near Hyner's, 6 miles S. of Pleasantville. 1633 above tide.

3063 TO 3420—JOHN F. CARLL—1875.

Above 2nd Mtn. Sand.

3063, (175,) Gray sandstone with *sigillaria.* ½ mile south from Allegheny Junction, Westmoreland Co.

3064, (175,) Brown sandstone, with *cordaites.* ½ mile south from Allegheny Junction, Westmoreland Co.

3065, (176,) Limonite, with calcite. Leechburgh, Westmoreland Co., Pa.

3066, (177,) Black limestone. 2 ft. thick and 1 ft. below coal. Leechburgh, Westmoreland Co., Pa.

3067, (178,) Bluish-gray S. S. Loose. R. R. embankment at Leechburgh, Westmoreland Co., Pa.

3068, (179,) Gray sandstone. Characteristic. Opposite Sharpsburgh, Allegheny Co., Pa.

3069, (180,) Green shale. From water-well. 1 mile north from Parkers Landing, Armstrong Co., Pa.

3070, (181,) Gray sandstone, *plant* stems. Loose. Bank of Allegheny River, at Parkers Landing.

3071, (181,) Gray sandstone, *plant* stems. Loose. Bank of Allegheny River, at Parkers Landing.

3072, (182,) Gray sandstone. *Lepidodendron.* Loose. 1 mile west from Allegheny River, up Bear Creek, Armstrong Co., Pa., near Parkers Landing.

3073, (183,) Gray sandstone. Loose. Dugan farm, 1 mile southwest of Millerstown, Butler Co., Pa.

3074, (183,) Gray sandstone. Loose. Dugan farm, 1 mile southwest of Millerstown, Butler Co., Pa.

3075, (184,) Bluish-gray limestone. ¾ mile southeast from Millerstown, Butler Co., Pa.

3076, (185,) Yellowish-brown shale. Summit of hill, 1 mile east from Petrolia.

3077, (186,) Limonite. Millerstown, Butler Co., Pa.

3078, (186,) Limestone. Millerstown, Butler Co., Pa.
3079, (187,) Cannel coal. ½ mile east from Central Point, Petrolia, Butler Co., Pa.
3080, (188,) Silicious, ferruginous concretion. Donnelly Station, P. & K. C. R. R., Armstrong Co., Pa.
3081, (189,) Dark gray limestone. 18 ft. above coal, & 4 ft. thick. Martinsburgh Station, Butler Co., Pa.
3082, (189,) Dark gray limestone. 18 ft. above coal, & 4 ft. thick. Martinsburgh Station, Butler Co., Pa.
3083, (190,) Dark gray limestone. ½ mile north from Martinsburgh R. R. Station, Butler Co., Pa.
3084, (191,) Gray limestone. Edenburgh Hills, Clarion Co.
3085, (192,) Limonite. Shippenville Hills, Clarion.
3086, (193,) Black shale. *Cordaites.* McEllery bank, 3 miles south-west from Franklin, Venango Co., Pa.
3087, (193,) Fire-clay. McEllery bank, 3 miles south-west from Franklin, Venango Co., Pa.
3088, (193,) Iron-ore. McEllery bank. Ditto.
3089, (193,) Coal. McEllery bank. Ditto.
3090, (194,) Sandstone. Loose. Devil's Rock. One mile west from Franklin, Venango Co.
3091, (194,) Sandstone, *calamite.* Loose. Devil's Rock. One mile west from Franklin, Venango.
3092, (196,) Sandstone, *fucoides.* Loose. Near Reservoir, one-half mile south-west from Franklin.
3093, (197,) Sandstone. 10 ft. above Bell's quarry. Near Reservoir, one-half mile south-west from Franklin, on Pittsburgh road.
3094, (198,) Greenish-gray sandstone, *fucoides.* 10 ft. above Bell's quarry. Near Reservoir.
3095, (199,) Sandy shale. 10 ft. above Bell's quarry.
3096, (200,) Gray sandstone with *sigillaria.* Loose. ½ mile S. W. from Franklin, near Reservoir.
3097, (201,) Bluish-gray sandstone. Loose. 1¼ miles N. from Franklin, Galloway Farm road, Venango.
3098, (202,) Bluish gray sandstone. Loose. Egbert Hill, Franklin, Venango Co.
3099, (203,) Yellow sandstone. Loose. 2½ miles south from Oil City, near Salem, Venango Co., Pa.

3100, (203,) Yellow sandstone, *Syringodendron.* Loose. 2½ miles south from Oil City, near Salem.
3101, (204,) Sandstone, *fucoides.* Loose, beneath Cranberry coal. 4 miles south east from Oil City.
3102, (205,) Gray sandstone. Loose, beneath Cranberry coal. Ditto.
3103, (207,) Yellow sandstone. Loose, beneath Cranberry coal. 4 miles south east from Oil City.
3104, (207,) Dark gray sandstone. Loose, beneath Cranberry coal. 4 miles south east from Oil City.
3105, (207,) Dark gray sandstone. Loose, beneath Cranberry coal. Ditto.
3106, (207,) Sandstone. Loose, beneath Cranberry coal. 4 miles south east from Oil City.
3107, (208,) Gray shaly sandstone, *discina.* Loose. 1½ miles east from Sharon, Mercer Co., Pa.
3108, (209,) Limestone. Loose, brought from Lawrence Co., Pa.
3109, (209,) Gray limestone. Loose, brought from Lawrence Co., Pa.
3110, (210,) Brown hematite. Snodgrass Bank, 1½ miles N. E. from Jamestown, Crawford Co., Pa.
3111, (211,) Carbonaceous shale. Snodgrass Bank.
3112, (211,) Sandstone. Snodgrass Bank.
3113, (211,) Shale. Snodgrass Bank, 1½ miles N. E. from Jamestown, Crawford Co., Pa.
3114, (212,) Shale, with *cordaites.* Duncan farm, 2½ miles N. E. from Orangeville, Mercer Co., Pa.
3115, (213,) White quartzose conglomerate. Shaft, 3 miles north east of Orangeville.
3116, (213,) White sandstone. Shaft. Ditto.
3117, (213,) Sandstone. Shaft. Ditto.
3118, (213,) Gray argillaceous sandstone. Shaft. Ditto.
3119, (213,) Limonite. Shaft. Ditto.
3120, (215,) Sandstone. Loose. Wilcox Station, Elk Co.
3121, (216,) Red shale. 4 feet thick. Montmorenci road, 4 miles south of Wilcox, Elk Co., Pa.
3121, (217,) Coal. 4 feet thick. Montmorenci road, 5 miles south of Wilcox, Elk Co., Pa.

3122, (217,) Shale. 4 feet thick. Montmorenci road. Ditto.
3123, (218,) Coal. 4 feet thick. Montmorenci road. Ditto.
3124, (218,) Shale. 4 feet thick. Montmorenci road. Ditto.
3125, (218,) Black slate. 4 feet thick. Montmorenci road. Ditto.
3126, (219,) Black slate, with *Alethopteris* and *Sphenopteris cristata.* Bond vein mine, Alton, McKean Co., Pa.
3127, (221,) Brown shaly sandstone. Loose. Newkirk Run, 1 mile north of Pleasantville, Pa.
3128, (222,) Bluish-gray shale, *Fucoidal* markings. Loose. Ditto.
3129, (223,) Grayish-yellow sandstone, *Fucoidal* markings. Loose. Ditto.
3130, (225,) Coarse conglomeritic sandstone. Loose. Ditto.
3131, (226,) Hard silicious sandstone. Loose. Curtis farm, 1 mile north of Pleasantville, Pa.
3132, (226,) Gray sandstone. Cast of *Sigillaria.* Loose. Ditto.
3133, (226,) Gray sandstone. Cast of *Sigillaria* Loose. Ditto.
3134, (226,) Gray sandstone. Loose. Ditto.
3135, (226,) Gray sandstone. Cast of *Sigillaria.* Loose. Ditto.
3136, (227,) Red quartzite. Loose. Ditto.
3137, (228,) Friable, red sandstone. Loose. Ditto.
3138, (229,) Yellow sandstone. Loose. Mitchell Farm, 1½ miles northeast from Pleasantville.
3139, (230,) Grayish-green S. S. *Strophodonta.* Loose. Ditto.
3140, (231,) Gray sandstone. Loose. Ditto.
3141, (233,) Sandstone. Loose. Ditto.
3142, (234,) Grayish-yellow sandstone. *Fucoidal* markings. Loose. Newkirk road, 1½ miles northeast of Pleasantville.
3143, (235,) Gray sandstone. Loose. Paschnicker Farm, 1¼ miles northeast of Pleasantville.
3144, (235,) Gray sandstone. Loose. Ditto.

3145, (236,) Gray sandstone with spine of *Ctenacanthus*. Loose. 2 miles north from Pleasantville, Venango Co., Pa. ; hill above "Reed well."

3146, (237,) Gray-green sandstone, *Orthis*. Loose. 1¾ miles north of Pleasantville; Anderson & Bates' farm.

3147, (239,) Grayish brown sandstone. Cast of *Sigillaria*. Loose.. 2 miles north west of Pleasantville; Henderson farm.

3148, (241,) Yellowish brown sandstone with casts of *Lingula* and *Rhynchonella*. Loose. 1 mile west from Pleasantville ; McCaslin farm.

3149, (243,) Gray sandstone with *Orthis*——. Loose. Ditto.

3150, (244,) Flaggy sandstone, *Fucoidal* markings. 3 miles south east from Pleasantville; Tyrrell farm, S. of turnpike.

3151, (245,) Yellow argillaceous sandstone. Ditto.

3152, (246,) Yellow argillaceous sandstone. Ditto.

3153, (247,) Gray shaly sandstone. 2½ miles south east from Pleasantville ; Tyrrell farm, N. of turnpike.

3154, (248,) Yellow sandstone, *Sigillaria*. 1 mile south east from Pleasantville ; Clarke farm road.

3155, (249,) Reddish gray sandstone. 1 mile south from Pleasantville; near "Rock well."

3156, (250,) Bluish gray sand-shale. Ditto.

3157, (250,) Bluish gray sand-shale, *Fucoids*. Ditto.

3158, (250,) Brown hematite. Ditto.

3159, (250,) Black slate. Ditto.

3160, (251,) Blue sandstone. 1½ miles south from Pleasantville ; on Mill farm.

3161, (252,) Reddish gray sandstone, *Fucoidal* markings. 1½ miles south west from Pleasantville ; "Red Hot."

3162, (253,) Black slate. 4 miles west from Pleasantville ; Sheridan farm.

3163, (253,) Cast of plant-stem in sandstone. Ditto.

Garland Conglomerate.

(*Ohio Conglomerate, or 2d. Mountain Sand.*)

3164, (254,) Gray sandstone. Cast of *Sigillaria* 5 miles S. W. of Jamestown, Foulkes quarry, Warren county, Pennsylvania.

3165, (254,) Gray, friable sandstone. Ditto.

3166, (254,) Gray, friable sandstone. Ditto.

3167, (255,) Gray-green flaggy sandstone. 1 mile N. E. of Jamestown, Snodgrass quarry, Crawford Co.

3168, (255,) Sandstone with *fish* remains and *plant* impressions. Ditto.

3169, (255,) Laminated, micaceous sandstone with. Ditto.

3170, (255,) Yellowish-brown S. S. with large pebbles. 1 mile north east of Jamestown, Snodgrass quarry, Crawford Co., "Ohio."

3171, (255,) Ferruginous clay concretion. Ditto.

3172, (255,) Reddish-gray sandstone with concretions of much the same color, but harder and ferruginous. Ditto.

3173, (256,) Yellowish-green sandstone. Ditto.

3174, (256,) Yellow argillaceous sandstone. Ditto.

3175, (257,) Yellow-white sandstone. Ditto.

3176, (257,) Coarse yellow sandstone with spine of *Ctenacanthus*. Ditto.

3177, (257,) Sandstons, fragment of *Ctenacanthus*. Ditto.

3178, (258,) Sandstone, *Rhynchonella* and *Orthis* Loose. Ditto.

3179, (259,) White sandstone. $2\frac{3}{4}$ miles north east of Chrystus quarry.

3180, (260,) Yellow and brown sandstone with *Strophodonta*. Ditto.

3181, (261,) Gray-green shaly sandstone. $\frac{1}{2}$ mile west of Adamsville, Chrystus quarry.

3182, (261,) Blue sand shale. Ditto.

3183, (262,) White sandstone. $5\frac{1}{2}$ miles south of Evansburgh, McLenahen farm.

3184, (263,) Sandstone. Loose. $4\frac{3}{4}$ miles south of Evansburgh, J. Unger's mill.

3185, (264,) Coal. 6¼ miles south of Evansburgh, Hazen mine.
3186, (264,) Coal. Ditto.
3187, (265,) Yellow sandstone, *plant* stem. Ditto.
3188, (266,) Rotten black shale. 3½ miles south of Evansburg, McEntire farm.
3189, (266,) Cannel coal. Ditto.
3190, (267,) Cannel coal. Ditto.
3191, (267,) Coal. Ditto.
3192, (268,) Cannel coal. Ditto.
3193, (268,) Limonite. Ditto.
3194, (269,) Coal. 2 miles south of Evansburgh; Mushrush farm.
3195, (270,) Black slate, with *Cordaites*, *Sigillaria*, &c. Ditto.
3196, (271,) Sandstone, with carbonaceous matter. Ditto.
3197, (272,) Yellow sandstone. Ditto.
3198, (273,) Bluish-gray sandstone. Ditto.
3199, (274,) White sandstone *plant* impressions. Ditto.
3200, (275,) Yellowish-brown sandstone. ½ mile north of R. R. Sta., Evansburgh; Miller's quarry.
3201, (275,) Yellow-brown sandstone, with Rhynchonella, spirifer, &c. Ditto.
3202, (275,) Light gray sandstone. Ditto.
3203, (276,) Limonite, occurring in brown sandstone. 1⅜ miles northwest of Meadville Court House (quarry.)
3204, (276,) Conglomerate. Ditto.
3205, (277,) Yellow sandstone. 3 miles west of Townville, Maryatts Knob.
3206, (278,) Gray micaceous sandstone cast of *Sigillari.* Franklin, Bell Quarry, Venango Co.
3207, (279,) Yellow sandstone *Sigillaria*, &c. Ditto.
3208, (280,) Pebble of gray and gray micaceous S. S. Ditto.
3209, (281,) Blue shale. Ditto.
3210, (282,) Bluish-gray sandstone. Ditto.
3211, (283,) Bluish-gray *Rhynchonella*, *orthis*, &c. Ditto.
3212, (284,) Brown S. S. with plant impressions. Ditto.
3213, (284,) Brown sandstone. Ditto.

3214, (284,) Brown sandstone. Ditto.
3215, (285,) Yellow S. S., with *fish scale.* Loose. Franklin, Bell Quarry ; Egbert Hill.
3216, (286,) Yellow-brown sandstone. Franklin, Bell Quarry ; Old Quarry south of Town.
3217, (287,) Yellow S. S. spine of *Ctenacanthus.* 1 mile north of Franklin, McCalmont Quarry.
3218, (288,) Gray sandstone. Loose. 1 mile north of Franklin, French Creek.
3219, (289,) Green S. S. with *fish* remains. Franklin Old Quarry, Centre of Town, Venango Co.
3220, (289,) Green-gray S. S., surface covered with pebbles. Ditto.
3221, (289,) Coarse brown conglomeritic sandstone, with *fish* and *plant* remains. Ditto.
3222, (289,) Gray micaceous shaly sandstone. Ditto.
3223, (289,) Reddish-brown micaceous S. S., *Orthis,* &c. Ditto.
3224, (292,) White conglomeritic sandstone and large ovate white quartz pebbles. ½ mile north east of Titusville, Spring Creek Road, Crawford Co.
3225, (293,) Yellowish-brown sandstone. 2¾ miles north west of Pleasantville, McGee Hill, Venango.
3226, (295,) Reddish-yellow sandstone. Loose. 1 mile south west of West Spring Creek, Belden Hill, Warren Co.
3227, (296,) Reddish-yellow sandstone, *Crinoid* stems. Loose. 2 miles north east of Wrightsville, Pikes Hill.
3228, (296,) *Spirifer.* Ditto.
3229, (297,) White and pink quartz pebbles. Ditto.
3230, (298,) Argillaceous sandstone, *fish* scale. 2 miles north east of Wrightsville, Pikes Hill, "Water Well."
3231, (298,) Yellow shaly S. S., *Fucoidal* markings. Ditto.
3232, (298,) Yellow sandstone plant. Ditto.
3233, (299,) Conglomerate of white quartz pebbles. 2 miles north east of Warren, Quaker Hill.
3234, (299,) Conglomerate of round white pebbles. Ditto.

3235, (300,) Yellow micaceous sandstone. Wilcox Station.
3236, (302,) Sandstone yellow, with brown blotches. 6 miles south west of Olean, N. Y.

Cuyahoga Shale.

3237, (303,) Gray sandstone. 2½ miles north east of Warren, Quarry, Trumbull, O.
3238, (304,) Gray sandstone, *Orthis.* Baconsburgh, Trumbull, O.
3239, (305,) Yellow-gray sandstone. 1½ miles north east of Kinsman, (characteristic.)
3240, (305,) Yellow-gray sandstone. Ditto.
3241, (306,) Yellow-gray sandstone, *Orthis.* 1 mile east of Sharpsville, Mercer Co.
3242, (307,) Flaggy sandstone, *Fucoidal* markings. 3 miles west of Jamestown.
3243, (308,) Blue-gray sandstone. 2 miles ditto.
3244, (309,) Blue-gray sandstone *Fucoid* stem. 1 mile north east of Jamestown; below Snodgrass Quarry.
3245, (310,) Yellowish-green sandstone. Ditto.
3246, (311,) Yellowish-green S. S. *Fucoid.* 1 mile south west of Adamsville.
3247, (312,) Argillaceous sandstone *Fucoid.* Atlantic Water Wells.
3248, (313,) Bluish-gray and reddish-blue thinly bedded sandstone. ½ mile south of Atlantic R. R. Station.
3249, (314,) Brown sandstone—ripple marks. Loose. Ditto.
3250, (314,) Gray sandstone. Loose. Ditto.
3251, (314,) Gray " Loose. Ditto.
3252, (314,) Argillaceous sandstone. Loose. Ditto.
3253, (315,) Sandstone. Loose. 1 mile north east ditto.
3254, (316,) Ferruginous clay concretion. Loose. 4¾ miles south of Evansburgh, near J. Ungers Mill.
3255, (317,) Ferruginous sandstone. 2 miles south of Evansburgh; bottom of run.
3256, (318,) Yellow sandstone and blue-gray shaly S. S. Meadville, W. of French Creek.

3257, (319) Gray sandstone *Aviculopecten.* Loose. 1 mile east of Little Cooley.

3258, (320,) Yellow sandstone. *Productella* and *Strophodonta.* 1 mile south of Spartansburgh.

3259, (322,) Grayish-green S. S. *Fucoid.* 1½ miles south east of Spartansburgh Hill, E. of A. Bates.

3260, (322,) Yellow-brown, ferruginous S. S. Ditto.

3261, (323,) Sandstone. ¾ mile north of R. R. Crossing; mouth of Spring Cr.

3262, (324,) Blue-gray sandstone *Fucoidal* markings. 1½ miles north of Titusville, Crawford.

3263, (325,) Gray-green sandstone with *Productella Spirifer.* 2 miles ditto.

3264, (325,) Yellow-gray S. S. *Fucoidal* markings, &c. Ditto.

3265, (326,) Sandy shale. 3 miles north east ditto.

3266, (327,) White sandstone. Carbonaceous cast of plants, &c." Loose. 2½ miles ditto; Spring Cr. Road.

3267, (328,) Reddish-white micaceous sandstone. East end of Oil City Bridge, "Venango."

3268, (328,) *Alga* casts in sandstone. Ditto.

3269, (330,) Gray-green shaly S. S. ¼ m. south of Depot, Oil City.

3270, (331,) Blue-gray S. S. ½ m. south of Depot, Oil City, Slate Run.

3271, (332,) White S. S. with plant casts. Loose. West side of Oil Creek at Oil City.

3272, (333,) Gray S. S. Loose. Franklin, Egbert Hill.

3273, (334,) Brown sandstone concretion. Loose. Franklin, east end of lower bridge, French Cr.

3274, (335,) Gray-green S. S. (*worm* markings). 2½ m. northwest of Pleasantville below 2d mtn. S.

3275, (337,) Grayish-yellow S. S. (*plant*-remains). 3½ m. north-west of Pleasantville, Guild farm.

3276, (338,) Sandstone. Loose. 2½ m. north north-west of Pleasantville, below S. S. Benedict farm.

3277, (338,) S. S. with *Productella?* Ditto.

3278, (339,) Gray S. S. *Productella lachrymosa.* ½ m. east of Triumph, Dennis Run, Warren.
3279, (340,) Sandstone. Ditto.
3280, (341,) Sandstone. Loose. Tidioute Hill, opposite Shaw House.
3281, (342,) Dark gray-green and brown and reddish-brown S. S. with *Spirif. disjuncta, Orthoceras, crinoid* marking, &c. ½ m north of Warren.
3281, (343,) Dark gray-green and brown and reddish-brown S. S. with ditto.
3282, (349,) S. S. with *Orthis* impression, *Streptorhynchus chemungensis, Spirifer disjuncta.* Wilcox hill W. of Depot.
3283, (349,) Gray S. S. *Rhynchonella, Spirifer disjuncta, Strophomena rhomboidalis?* Ditto.
3284, (349,) Yellow argillaceous sandstone. Ditto.
3285, (349,) Gray S. S. *Strophomena, Pterinea, Orthoceras.* Ditto.
3286, (350,) Gray S. S. Loose. Ditto.
3287, (351,) Gray S. S. Loose. Ditto.
3288, (352,) Yellow S. S. (*Strophomena rhomb.*) Loose. Ditto.
3289, (353,) Dark red-ferruginous S. S. 4 miles south of Wilcox, Montmorenci Road.

Berea Grit.

3290, (354,) White sandstone. Berea Quarries. Trumbull, O.
3291, (355,) Gray S. S. 3 miles south-west of Mecca. Shaft sunk for oil, Trumbull, O.
3292, (355,) Bluish-gray sandstone. Ditto.
3293, (355,) Bluish-gray sandstone. Ditto.
3294, (355,) Gray sandstone. Ditto.
3295, (355,) Gray sandstone. Ditto.
3296, (356,) Gray sandstone, (plant stems.) ½ mile east of Jamestown Lower Quarry, Snodgrass Run.
3297, (356,) Gray-green S. S. Ditto.
3298, (357,) Gray sandstone shale. ¼ mile north-east of Jamestown Lower Quarry, just above Gibson Well.

3299, (358,) Gray sandstone, (with *Lingula ligea,*) and (*Spirifer mesostrialis ?*) ¼ mile north-east of Jamestown Lower Quarry, *at* Gibson Well.

3300, (359,) Casts of *Modiola.* Loose. 1 mile north-east of Jamestown Lower Quarry, Gibson Run.

3301, (361,) Grayish-yellow S. S. ½ mile north-east of Jamestown Lower Quarry, at Gibson Quarry.

3302, (362,) Yellow-white S. S. 3 miles north of Titusville, Thompson Mill.

3303, (363,) Yellow S. S. Ditto.

3304, (364,) Clay shale. 3 miles north of Titusville, Bedford.

Bedford Shale.

3305, (365,) Clay shale, (Fucoid markings,) and green S. S., with *Spirifer.* Miller farm, east end of Bridge, Venango.

3306, (366,) Grayish-green S. S. Loose. Miller farm, east of Oil Creek.

3307, (367,) Green flaggy S. S., with (*Chonetes* and Fucoid stems.) Ditto.

3308, (368,) Gray-green S. S., *Orthis, Strophomena,* &c. Miller farm, west of Oil Creek.

3309, (369,) Green-gray S. S., *Spirifer disjuncta.* Loose. 3½ miles north-west of Pleasantville, on Pine Creek.

3310, (369,) Yellow-gray S. S. Ditto.

3311, (370,) Argillaceous S. S. 3 miles north 50° west of Pleasantville, Nelson farm.

3312, (370,) Argillaceous S. S., (plant impressions.) Ditto.

3313, (371,) Sandstone. Ditto.

3314, (372,) Argillaceous S. S., (*Dictyophyton.*) Ditto.

3315, (373,) Gray-green argillaceous S. S., (crinoid stems.) Ditto.

3316, (373,) Argillaceous S. S., (crinoid stems.) Ditto.

3317, (373,) Gray-green argillaceous S. S. Ditto.

3318, (374,) Green S. S., (*Aviculo-pecten* and *Rhynchonella.*) Ditto.

3319, (374,) Argillaceous S. S., *Aviculo-pecten* and *Streptorhynchus.* Ditto.

3320, (375,) Grayish-green S. S., (chonells.)
3321, (376,) Grayish-green argillaceous S. S., with crinoid stems, &c. Ditto.
3322, (377,) Gray-brown S. S. Ditto.
3323, (378,) Ferruginous S. S. Ditto.
3324, (380,) Blue-gray S. S., with concretions of harder dark brown material, (concretionary conglom.)
3325, (381,) Brown ferruginous S. S. Ditto.
3326, (382,) Greenish-brown shaly S. S. Ditto.
3327, (383,) Gray-green shaly S. S. Ditto.
3328, (383,) Gray-green shaly S. S. Ditto.
3329, (384,) Gray-green S. S. Ditto.
3330, (385,) Green sandstone. 3 miles north 50° east of Pleasantville, Nelson farm.
3331, (385,) Green sandstone. Ditto.
3332, (386,) Yellowish-white sandstone. Ditto.
3333, (387,) Grayish-yellow S. S., with casts and impres. of *Spirifer alta*, *Spirif. disjuncta*, *Orthis*, &c. 2½ miles north 20° west of Pleasantville, McDonald & Robinson, Robinson farm.
3334, (388,) Yellow-brown argillaceous S. S., (crinoid) sandstone. Ditto.
3335, (388,) Sandstone. Ditto.
3336, (389,) Yellow-brown S. S. Ditto.
3337, (390,) Gray-yellow S. S., (*Spirifer*, &c.)
3338, (392,) Yellow S. S., (spine of *Ctenacanthus*.) 2½ miles north 20° west of Pleasantville, McDonald & Robinson farm, Warren Co.
3339, (393,) Concretionary conglomerate. Loose. Ditto.
3340, (394,) Gray-green sand shale. Ditto.
3341, (395,) Sandstone slab showing ripple marks. Ditto.
3342, (396,) Yellow-green S. S., with (productus.) Loose. 1 mile west of Tidioute, Dennis Run, Warren Co.
3343, (397,) Conglomerate, green S. S., with rounded, mostly white, quartz pebbles. Loose. Ditto.
3344, (398,) Gray sandstone. Loose. Garland Quarry, (ft. of Tramway,) Warren Co.

3345, (399,) Blue-green sandstone. Spring Creek R. R. Station, Hill to North.
3346, (400,) Sandstone, (*Productus.*) Ditto.
3347, (401,) Rotten shaly sandstone. ½ mile south of Wilcox, Elk Co., Pa.

Cleveland Shale.

3348, (402,) Black clay shale. East Cleveland, Cemetery Run, Cuyahoga. O.
3349, (402,) Blue-gray sandstone, (concretion.) Ditto.
3350, (403,) Gray-blue shaly sandstone. Ashtabula Creek, north of R. R. Embankment, Ashtabula Co.
3351, (405,) Gray-green calcareous S. S., with calcareous impressions of *Spirifer disj.* Campbell Hill road, Tidioute, Warren Co.

Oil Group.

3352, (406,) Bluish-gray sandstone. Meadville, Town Run, Crawford Co., Pa.
3353, (406,) Blue silicious shale. Ditto.
3354, (407,) Yellowish-green sandstone. Meadville, cellar w. of French creek, Crawford Co., Pa.
3355, (408,) Yellowish-gray sandstone. Loose. Railroad embankment, 1 mile south of Meadville, Crawford Co., Pa.
3356, (409,) Conglomeritic, friable sandstone. West Spring Creek, Johnson's mill, Warren Co.
3357, (409,) Conglomeritic, friable sandstone. Ditto.
3358, (409,) Greenish-yellow conglomeritic friable sandstone. Ditto.
3359, (410,) Gray-brown sandstone. Ditto.
3360, (411,) Gray shaly sandstone, (*Spirifer.*) Ditto.
3361, (412,) Sandstone with *Cardiomorpha.*
3362, (413,) Brown sand shale. ¼ mile east of Wrightsville, Warren Co., Pa.
3363, (414,) Sandstone. Wrightsville, east of Broken's Farm, Warren Co., Pa.
3364, (416,) Calcareous tufa like rock. Loose. 1 mile north of Wrightsville, Abbott's Corners, Warren Co.

3365, (416,) Mottled brown and green S. S., (*Spirifer disjuncta.*) Loose. Ditto.

3366, (417,) Green S. S. and grayish-brown conglomeritic sandstone, (*Chonetes* and *Streptorhynchus.*) Loose. One-half mile north-west from Sugar Grove, Warren Co.

3367, (418,) Brown sandstone, (plant impressions.) Quarry, hill north of Warren, Warren Co., Pa.

3368, (418,) Gray S. S., with plant markings. Ditto.

3369, (419,) Hard gray sandstone. Loose. Hillside, north-west from Depot, Warren, Warren Co.

3370, (419,) Greenish-gray S. S., with fucoidal markings. Loose. Ditto.

3371, (420,) Argillaceous sandstone. Loose. Warren, Quaker Hill road, east of Conewango, Warren Co.

3372, (420,) Reddish-brown S. S., (plant stems.) Loose. Ditto.

3373, (420,) Reddish-brown S. S., (*Spirifer disjuncta.*) Loose. Ditto.

3374, (420,) Gray-green S. S., (Fucoidal markings.) Loose. Ditto.

3375, (421,) Grayish-brown sandstone. Loose. Warren, hill north of town, Warren Co., Pa.

3376, (423,) Limestone conglomerate, a gray limestone with small quartz pebbles, (*Spirifer disjuncta.*) Loose. Campbell hill road, Tidioute, Warren Co., Pa.

3377, (423,) Yellow-brown sandstone. Loose. Ditto.

3378, (427,) Greenish-gray calcareous sandstone with *Spirifer disjuncta.* 1½ miles south of Irvineton, bystone house, Warren Co.

3379, (428,) Gray-blue calcareous shale. Irvineton Point R. R. cutting, Warren Co., Pa.

3380, (428,) Gray-blue sand shale. Ditto.

3381, (428,) Gray-blue sand shale. Ditto.

3382, (429,) Reddish-brown clay shale. ¾ mile west of Warren, Warren Co., Pa.

3383, (429,) Mottled reddish-blue and green shale. Ditto.

3384, (429,) Reddish brown shale. Ditto.
3385, (430,) Brown sandstone. 2 miles south of Bradford, McKean Co., Pa.
3386, (431,) Gray shale. ½ mile south-east from Bradford, (on hill top,) McKean Co., Pa.
3387, (432,) Gray conglomeritic sandstone. Loose. Hillside north of Bradford, McKean Co., Pa.
3388, (433,) Shaly S. S., (*Spirifer disjuncta*, *Orthoceras?*) Loose. E. of Tuneangwant creek, 1 mile south of Bradford.
3389, (434,) Shaly S. S., (*Spirifer disjuncta*, *Orthoceras?*) Loose. West of Tuneangwant creek, 1½ miles south of Bradford.
3390, (435,) Brown calcareous S. S., (fragments of *Spirif.*) Loose. West of Tuneangwant creek, 2 miles south of Bradford.
3391, (436,) Gray calcareous S. S., (*Orthoceras* and *Spir. disj.*) Loose. Hillside north of Bradford, McKean Co., Pa.
3392, (436,) Sandstone, (weathered.) Loose. Ditto.
3393, (437,) Grayish-white S. S., (*Rhynchonella contracta.*) Loose. ½ mile west of Bradford, near Boss well, McKean Co.
3394, (438,) Gray-brown S. S., (*Spirifer disjuncta.*) Loose. Moses Farm, west of Tunangwant creek, Limestone, Cattaraugus Co., N. Y.
3395, (438,) Sandstone with *fish* remains. Loose. Ditto.
3396, (439,) Gray sandstone. Ditto.
3397, (440,) Green S. S. and brown S. S. Ditto.
3398, (441,) Grayish-green S. S. with *spirifer* and *crinoid* stems. Between DeGolies and Marsh's cross roads, near Bradford, McKean Co., Pa.
3399, (441,) Grayish-green S. S., with Ditto.
3400, (441,) Grayish-green S. S., with Ditto.
3401, (442,) Gray-green shaly sandstone, with *Gramnysia elliptica* and *Rhynchonella.* Bradford, east of Bridge, Tarport road, McKean Co., Pa.
3402, (442,) Gray-green S. S. Ditto.
3403, (442,) Shaly S. S., (*Spirif.*, *Rhyn*, *Prod.*, &c.) Ditto.

3404, (442,) Greenish-gray shaly sandstone. Ditto.
3405, (444,) Gray sandstone. Characteristic (loose.) Carrollton, Cattarangus Co., N. Y.
3406, (445,) Conglomeritic S. S. with *Spirifer*. Loose. Between Salamanca and Rock City, Cattaraugus Co., N. Y.

Local Drift.

3407, (446,) Conglomeritic S. S. with *Spirifer*. Loose. Spring Creek R. R. Station, Warren Co., Pa.
3408, (447,) Green argillaceous S. S., (fossils.) Loose. Spring Creek R. R. junc., with Broken straw (abundant.)
3409, (448,) Yellow-gray S. S. (*Rhynchonella*, &c.) Loose. ½ m. west of West Spring Creek P. O., Warren Co., Pa.
3410, (450,) Gray-green S. S., (*Rhynchonella.*) Loose. R. R. ballast, Corry, Erie Co., Pa.
3411, (451,) Gray-brown sand shale, (*crinoid* stems.) Loose. Olean, near canal, Cattaraugus Co., N. Y.
3412, (452,) Brown S. S., (*Rhynchonella*, &c.) Loose. 1½ m. north of Hydetown, Crawford Co., Pa.
3413, (456,) Sandy shale, (*Rhynchonella orbicularis.*) Loose. Meadville, west of French creek, Crawford Co., Pa.

Foreign Drift.

3414, (458,) Red quartzose and feldspathic rock. Loose. Spring Creek R. R. Station, Warren Co., Pa.
3415, (459,) Quartzose and feldspathic rock. Belden Hill, 1 m. west of West Spring Creek P. O., Warren Co., Pa.
3416, (459,) Reddish gray granitic gneiss. Ditto.
3417, (460,) Gray micaceous garnetiferous schist, with quartz and garnets. Bates Hill, 1¼ m. south west of Spartansburg, Crawford Co.
3418, (460,) Feldspathic rock with quartz. Ditto.

3419, (461,) Gray syenite and coarse feldspathic rock, with crystals of hornblende, (aclinolite?) Seeley Hill, 1 m. north of Hydetown, Crawford Co.

3420, (462,) Quartz, gray gneiss and syenite. Meadville Hills, Crawford Co., Pa.

3421 TO 3669—FRANKLIN PLATT—1874.

Calciferous.

3421, Light bluish-gray limestone. 1 mile W. from Millerstown, Blair Co.
3422, Gray limestone. 1 mile S. W. from Woodbury in Morrison's Cove, Bedford Co.
3423, Gray limestone. ⅓ mile from Williamsburgh on the Juniata River, Blair Co.
3424, Blue limestone, fossiliferous. Near Henrietta Mine, ½ mile S. W. from Mine No. 1, in Leathercracker Cove, Blair Co.

Black River.

3425, Dark gray limestone. ¼ m. E. from Fredericksburg, Blair Co.
3426, Dark gray crystalline limestone. Ditto.
3427, Dark gray crystalline limestone. Ditto.
3428, Dark gray crystalline limestone. Ditto.
3429, Dark gray crystalline limestone. Ditto.

3430 TO 3556—LEHIGH RIVER.

Hudson River.

3430, (1,) Grayish-black slate. East side of Lehigh River, R. R. cut, Lehigh and Susquehanna Div., Central R. R. of N. J. below a red house situated below "Chain Bridge," south from Lehigh Gap, Northampton county, Pa. 1005 ft. below "Red House."
3431, (3,) Grayish black slate. Ditto. S. E. of "Red House" 985′.
3432, (8,) Gray slate. Ditto 935′.
3433, (9,) Greenish-yellow argillaceous sandstone. 925′.

3434, (11,) Slate. Ditto 905′.
3435, (14,) Slate. Ditto 875′.
3436, (18,) Compact dark gray argillaceous sandstone. Ditto 835 ft.
3437, (19,) Gray slate, surfaces stained brown with iron oxide. Ditto 825′.
3438, (22,) Blue slate. Ditto 795′.
3439, (25,) Yellowish-gray slate. Ditto 765′.
3440, (27,) Dark gray slate. Ditto 745′.
3441, (29,) Conglomerate of clay and slate. Ditto 730′.
3442, (30,) Dark gray slate, finely laminated and very ferruginous. R. R. cut below "Red House, 725 ft.
3443, (32,) Dark bluish gray slate. " 705 ft.
3444, (33,) Blue slate. Above "Red House," 187 ft.
3445, (35,) Blue slate. " 205 ft.
3446, (38,) Blue slate. " 235 ft.
3447, (40,) Grayish blue slate. " 265 ft.
3448, (42,) Grayish blue slate. " 285 ft.
3449, (44,) Soft gray slate. " 305 ft.
3450, (48,) Soft, gray to bluish white slate. Above "Red House," (at culvert,) 360 ft.
3451, (50,) Gray slate. " 385 ft.
3452, (53,) Mottled and canded blue, and grayish white slate. " 415 ft.
3453, (55,) Mottled and canded blue, and grayish white shaly slate. " 425 ft.
3454, (58,) Variegated gray, and grayish red and brown shale. " 465 ft.
3455, (60,) Ferruginous slate. " 485 ft.
3456, (63,) Blue slate. (Bridge over canal,) 505 ft.
3457, (67,) Dark blue slate. " 545 ft.
3458, (69,) Dark blue slate. (Dam across river,) 575 ft.
3459, (72,) Blue slate. 30 ft. above Breast of Dam across Lehigh River.
3460, (74,) Dark blue slate. 50 ft. ditto.
3461, (75,) Ferruginous slate. 60 ft. ditto.
3462, (78,) Bluish black slate. 90 ft. ditto.
3463, (79,) Thinly laminated bluish black slate. 100 ft.
3464, (81,) Thinly laminated bluish black slate. 120 ft.

3465, (82,) Thinly laminated bluish black slate. 130 ft.
3466, (84,) Light blue slate with argillaceous bands. 150′
3467, (85,) Greenish gray sandy shale. 160 ft. ditto.
3468, (88,) Bluish black slate. 190 ft. ditto.
3469, (90,) Gray slate. E. side of Lehigh River, S. from Lehigh Gap. 210 ft. above breast of dam.
3470, (91,) Gray slate. 220 ft. ditto.
3471, (92,) Light blue slate. 230 ft. ditto.
3472, (95,) Gray slate. 260 ft. ditto.
3473, (98,) Greenish-gray slate. 290 ft. ditto.
3474, (100,) Gray slate. 310 ft. ditto.
3475, (101,) Gray slate. 320 ft. ditto.
3476, (103,) Blue slate. 360 ft. ditto.
3477, (106,) Dark blue slate. 390 ft. ditto.
3478, (107,) Dark blue slate. 400 ft. ditto.
3479, (110,) Dark blue slate. 455 ft. ditto.
3480, (111,) Brown shaly slate, banded with light gray slate. 470 ft. ditto.
3481, (112,) Gray and grayish-blue slate. 480 ft. ditto.
3482, (114,) Blue slate. 500 ft. ditto.
3483, (116,) Blue slate. 520 ft. ditto.
3484, (119,) Yellowish-gray slate. 606 ft. ditto.
3485, (123,) Greenish-gray slate. 640 ft. ditto.
3486, (125,) Greenish-gray slate. 660 ft. ditto.
3487, (126,) Yellowish-gray slate. 670 ft. ditto.
3488, (127,) Grayish-green sandy shale. 680 ft. ditto.
3489, (130,) Blue slate. 705 ft. ditto.
3490, (131,) Ferruginous slate showing slickensides. 720 ft.
3491, (132,) Yellow and light gray shale. 730 ft. ditto.
3492, (133,) Variegated gray and yellow slate. 740 ft.
3493, (136,) Banded greenish-gray and yellowish-gray shale. 770 ft. ditto.
3494, (139,) Blue slate, with bands of yellow slate. 800 ft.
3495, (140,) Yellow shaly slate. 810 ft.
3496, (143,) Black slate with bands of yellow slate. 840 ft. above breast of dam on Lehigh River.
3497, (145,) Shale. 860 ft. ditto.
3498, (147,) Shaly slate. 915 ft. ditto.
3499, (151,) Brown and reddish-yellow shale. 1000 ft.

3500, (152,) Very soft, grayish-white clay shale. 1010 ft.
3501, (154,) Blue slate with buff colored blotches. 1030 ft.
3502, (157,) Bluish-gray shale with black bands. 255 ft. above N. E. corner of Lower Hotel at Lehigh Gap (Stone Hotel) on E. side of Lehigh River.
3503, (158,) Ferruginous shale. 265 ft. above N. E. corner of Stone Hotel.
3504, (159,) Blue slate. 285 ft. ditto.
3505, (160,) Blue shaly slate. 295 ft. ditto.
3506, (162,) Greenish-gray sand-shale. 325 ft. ditto.
3507, (164,) Blue slate. 345 ft. ditto.
3508, (166,) Blue slate. 365 ft. ditto.
3509, (167,) Shale, iron-stained. 375 ft. ditto.
3510, (168,) Gray shale. 385 ft. ditto.
3511, (169,) Blue slate. 395 ft. ditto.
3512, (170,) Blue slate. 405 ft. ditto.
3513, (172,) Blue sandy slate. 425 ft. ditto.
3514, (174,) Blue sandy slate. 450 ft. ditto.
3515, (176,) Blue slate. 470 ft. ditto.
3516, (178,) Slate. 490 ft. ditto.
3517, (180,) Grayish-green sandy shale. 510 ft. ditto.
3518, (181,) Blue sandy shale. 520 ft. ditto.
3519, (184,) Shale. 530 ft. ditto.
3520, (187,) Grayish-blue sandy shale. 560 ft. ditto.
3521, (188,) Grayish-blue sandy shale. 570 ft. above N. E. corner of Stone Hotel, below Lehigh Gap.
3522, (192,) Grayish-blue shaly sandstone. 620 ft. ditto.
3523, (194,) Shaly sandstone. 640 ft. ditto.
3524, (195,) Bluish-green shaly sandstone. 650 ft. ditto.
3525, (198,) Blue slate. Opposite centre of R. R. Bridge, below Lehigh Gap, E. side of Lehigh River along R. R.
3526, (199,) Blue shaly sandstone. 30 ft. above centre of R. R. Bridge.
3527, (200,) Brown sandy slate. 40 ft. ditto.
3528, (201,) Blue shale. 50 ft. ditto.
3529, (203,) Blue shale. 70 ft. ditto.
3530, (204,) Blue slate. 120 ft. ditto.

3531, (206,) Blue shale with coating of iron oxide. 140 ft.
3532, (207,) Soft, blue, clay shale. 150 ft. ditto.

Oneida.

3533, (208,) Coarse conglomerate-sandstone, quartz slate, &c. 260 ft. ditto.
3534, (209,) Grayish-green conglomerate. East side of Lehigh Gap, along R. R.
3535, (211,) Reddish-gray conglomerate. Ditto.
3536, (212,) Sandstone conglomerate. Ditto.
3537, (215,) Sandstone conglomerate. Ditto.
3538, (216,) Sandstone conglomerate. Ditto.

Medina.

3539, (218,) Red sandstone. Ditto.
3540, (219,) Gray sandstone. Ditto.

Oneida.

3541, (220,) Sandstone conglomerate. Ditto.

Medina.

3542, (224,) Gray sandstone. Ditto.
3543, (225,) Yellowish-gray sandstone. Ditto.
3544, (229,) Grayish-yellow sandstone. Ditto.
3545, (230,) Gray sandstone. Ditto.

Oneida.

3546, (233,) Conglomerate. E. side of Lehigh River, Lehigh Gap, Pa.
3547, (235,) Conglomerate. Ditto.
3548, (236,) Conglomerate. Ditto.
3549, (238,) Conglomerate. Ditto.
3550, (239,) Conglomerate. Ditto.
3551, (244,) Conglomerate. Ditto.
3552, (245,) Conglomerate. Ditto.

Medina.

3553, (246,) Gray sandstone. E. side of Lehigh River, Lehigh Gap, Pa.

3554, (247,) Gray sandstone. Ditto.
3555, (249,) Gray sandstone. Ditto.
3556, (251,) Gray sandstone. Ditto.

3557 to 3562—W. A. FELLOWS—1875.

Lower Helderberg.

3557, Bluish-black limestone. Quarry N. from Delaware Water Gap, Monroe Co., Pa.
3558, Gray limestone with calcite. Ditto.
3559, Calcite. Ditto.
3560, Black limestone. Ditto.
3561, Grayish-blue limestone. Ditto.
3562, Grayish-blue limestone. Ditto.

Oriskany.

3563, (1,) Sandy shale. West side of Lehigh River, below Bowman's, (at Tunnel of iron mine,) Carbon Co., Pa.
3564, (1,) Brown, sandy, ferruginous shale. Ditto.
3565, (2,) Yellowish-white chert. Ditto.
3566, (2,) Green chert. E. side of Lehigh River, ditto.
3567, (3,) Light-bluish red clay shale. W. side ditto.
3568, (4,) Reddish-gray sandstone. E. side ditto.
3569, (6,) Bluish-white chert. Ditto.
3570, (7,) Red chert. W. side of Lehigh River, ditto.
3571, (8,) Red cherty sandstone, fossiliferous. Ditto.
3572, (8,) Green chert. Ditto.
3573, (9,) White chert. E. side ditto.
3574, (16,) Soft, argillaceous, yellowish brown S. S. W. side of Lehigh River, above Bowman's Station, Carbon county, Pa.

3575-3587—JOHN H. DEWEES.

3575, (803,) Yellow sandstone. Martin's ore bank, S. W. from Logan Farm, Hill Valley, terrace of Jacks Mtn., 5 miles W. from Orbisonia, Huntingdon Co.

3576, (804,) Gray fossiliferous S. S. above hematite ore bed.

3577, (804,) Yellow and reddish S. S., fossiliferous. Ditto.

3578, (805,) Bluish white S. S., hanging wall of ore vein.

3579, (809,) Ferruginous S. S., bottom rock of ore bed. Lane ore bank, S. W. from Orbisonia, Hill Valley, Huntingdon Co.

3580, (811,) Yellow S. S. with chert fragments. Sandy Ridge, S. W. from Rockhill Gap in Blacklog Mountain, Huntingdon Co.

3581, (817,) Top shale of ore vein, lying between ore and sandstone, Ferrug-silic. shale. Lane ore-bank, 5 miles N. W. from Orbisonia, Hill Valley, Huntingdon Co.

3582, (833,) White S. S., 3d stratum over ore bed. Ditto.

Schoharie Grit.

3583, (834,) Yellow clay, fossiliferous. Hill Valley, W. from Orbisonia, 1½ miles N. W. from Chester Furnace.

Corniferous Limestone.

3584, (835,) Yellow clay. Hill Valley, W. from Orbisonia, 1½ miles N. W. from Chester Furnace.

Cauda Galli Grit.

3585, (818,) Reddish brown argillaceous sandstone. McVeytown, near sand-pit, 12 m. W. of Lewistown, Mifflin Co.

Upper Helderberg Limestone.

3586, (801,) Black limestone. Logan Farm ore-bank, 5 miles W. from Orbisonia.
3587, (802,) Dark grayish blue limestone. Ditto.

3588 TO 3598—LEHIGH RIVER.

Marcellus.

3588, (17,) Black slate. W. side of Lehigh River, above Bowman's Station, Carbon Co., Pa.
3589, (18,) Gray slate. Ditto.
3590, (20,) Shale coated with oxide iron. Ditto.
3591, (20,) Shale coated with oxide iron. Ditto.
3592, (21,) Variegated light gray and black slate. Ditto.
3593, (22,) Shale. Ditto.
3594, (22,) Shale. Ditto.
3595, (23,) Light gray slate. Ditto.
3596, (23,) Black slate. Ditto.
3597, (23,) Black slate. Ditto.
3598, (23,) Black slate. Ditto.

3599 TO 3606—JOHN H. DEWEES.

Hamilton.

3599, (820,) Ferruginous argillaceous S. S. fossiliferous. Saddleback Ridge, near Orbisonia, 1 mile W. from Cromwell, Blacklog creek, Huntingdon.
3600, (821,) Grayish green S. S. fossiliferous. Ditto.
3601, (825,) Grayish-green S. S. with tentaculites. Ditto.
3602, (1086,) Dark red highly ferruginous sandstone. South side of Mahony Ridge, in "Pole Cat" (Mahony) Valley from bottom bench of ore-bed —top bed of Hamilton sandstone from Geo. Petermyer's property, Duncannon Iron Co., Perry Co., Pa.
3603, (1086,) Dark red, highly ferruginous sandstone. "
3604, (1086,) Dark red, highly ferruginous sandstone. "
3605, (1086,) Dark red, highly ferrruginous sandstone. "
3606, (819,) Greenish-gray sandstone. Saddleback Ridge, 1 mile N. from Cromwell, near Orbisonia, Blacklog Valley, Huntingdon Co.

3607 TO 3614—ANDREW SHERWOOD.

Chemung.

3607, (102,) Green S. S. with *fucoidal* markings.

3608, (851,) Greenish-gray, calcareous flaggy S. S. with *fish* remains. Near mouth of Elk Run, 2 miles W. from Gainer, 20–40 rods above bridge over Pine Creek, Tioga Co.

3609, (853,) Grayish-blue S. S. with *crinoid* stems. Tioga Village, Tioga Co., Pa.

3610, (115,) Red argillaceous S. S. *fucoidal* markings.

3611, (100,) Variegated green and brown argillacaous sand-shale, with *Productus.*

3612, Greenish-gray sandstone. 2 miles W. from Tioga, Tioga Twp., Tioga Co., Pa.

3613, Red sandy shale. Watron's Saw Mill, 3 miles from Gainer, on Elk Run, Tioga Co.

3614, Red shale, ripple marked. Near Keeneyville, Middleburg Twp., Tioga Co.

3615 to 3622—J. H. DEWEES.

3615, (100,) Sandy shale with *Productus.*

3616, (1087,) Shaly limestone, fossiliferous. East side of Juniata River, near Newport, Perry Co., Pa., 400′ below "Ponent" red shale.

3617, (1087,) Shale. Ditto.

3618, (1087,) Grayish-green limestone. Ditto.

3619, (1088,) Shaly S. S., with *crinoid* stems. 1½ miles E. of 3616, same bed.

3620, (1088,) Shaly S. S., with *crinoid* stems. Ditto.

3621, (1088,) Calcareous shale. Ditto.

3622, (1088,) Shale, much decomposed, fossiliferous. Do.

3623 to 3658—W. A. FELLOWS—1876.

3623, Soft red shale. Paint Bed, Lewis Run, McKean Co.
3624, (863,) Grayish-green flaggy S. S. with *fucoidal* markings. R. R. cut, S. from Big Shanty, Bradford Division of N. Y. & Erie R. R., McKean Co., Pa.
3625, (863,) Grayish-green flaggy S. S. with ditto.
3626, (863,) Grayish-green flaggy S. S. with ditto.
3627, (863,) Grayish-green flaggy S. S. with ditto.
3628, (863,) Grayish-green flaggy S. S. with ditto.
3629, (863,) Grayish-green flaggy S. S. with ditto.
3630, (863,) Grayish-green flaggy S. S. with ditto.
3631, (863,) Grayish-green flaggy S. S. with ditto.
3632, (863,) Grayish-green flaggy S. S. with ditto.
3633, (863,) Grayish-green flaggy S. S. with ditto.
3634, (863,) Yellowish-red, friable sandstone. Ditto.
3635, (862,) Grayish-green S. S. *algae* markings. On Hillside, E. from DeGolier, E. side of Tunangwant Creek, McKean Co., Pa.
3636, (862,) Yellow sandstone. Ditto.
3637, (862,) Sandstone. Ditto.
3638, (862,) Gray, chemung conglomerate. On hillside, E. from De Golier, east side of Tungangwant creek, Bradford Div. Erie R. R., McKean Co.
3639, (862,) Reddish-gray S. S., with ripple marks. Ditto.
3640, (862,) Green flaggy S. S., with *Spirifer disjuncta.*
3641, (862,) Large ovate pebbles of milky quartz from conglomerate. Ditto.
3642, (862,) Conglomeritic S. S. Ditto.
3643, (862,) Conglomeritic S. S. Ditto.
3644, (862,) Shale. Ditto.
3645, (862,) Gray S. S., fucoidal markings. Ditto.
3646, (862,) Shale. Ditto.
3647, (862,) Flaggy S. S., with *Spirifer disjuncta* Ditto.

3648, (862,) Conglomerate. Ditto.
3649, (862,) Grayish-green argillaceous sandstone. Ditto.
3650, (862,) Gray conglomeritic fossil sandstone. Ditto.
3651, (862,) Gray conglomeritic fossil sandstone. Ditto.
3652, (862,) Red conglomeritic fossil sandstone. Ditto.
3653, (862,) Yellowish-green sandstone. Ditto.
3654, (862,) Conglomeritic sandstone. Ditto.
3655, (862,) Conglomeritic sandstone, grayish-green. Ditto.
3656, (862,) Conglomeritic sandstone. Ditto.
3657, (862,) Grayish-green sandstone, *Algae*. Ditto.

Hamilton, &c.

3658, (865,) Gray limestone. S. side of Mahony Ridge in "Pole Cat," (Mahony) Valley, from bottom bench of ore-bed, top bed of Hamilton S. S., Perry Co., Pa., Geo. Petermyer's property.
3659, (824,) Breccia S. S., clay, hematite, &c. Sandy Ridge near Orbisonia, Huntingdon Co.
3660, Argillaceous hematite. Mountain ore-bank, 4 miles S. W. from Orbisonia, Pa.
3661, Carbonate of iron. Shaft on corner of Newcome Farm, Lafayette road, McKean Co., Pa.
3662, Carbonate of iron. Logan Farm ore bank, 5 miles W. from Orbisonia.
3663, Carbonate clay. Ditto.
3664, (828,) Carbonate clay. Ditto.

Chemung.

3665, Hematite, somewhat silicious, used in the Furnace at Mansfield, Pa. 3 miles west from Mansfield, Tioga Co.
3666, (24,) Highly ferruginous sandstone. ½ mile S. W. from Columbia cross roads, Bradford Co., Pa.
3667, (10,) Ferruginous sandstone, (No. 6, of a section.) 1 mile S. E. from Ogden Corners, Union Twp., Tioga Co. Pa.
3668, (18,) Highly ferruginous sandstone. About 3 miles S. from Canton, on property of Ichabod Sellard, Bradford Co., Pa.
3669, (6,) Highly ferruginous sandstone. 8 miles S. E. from Mansfield, Rutland Twp., Tioga Co., Pa.

3670 to 3945—P. FRAZER, Jr., 1876.

3670, (1365,) Orthofelsite porphyry. Pinch Gut, near Mont Alto, Franklin Co., Pa.
3671, (1366,) Orthofelsite porphyry. Ditto.
3672, (1367.)
3673, (1368,) Orthofelsite porphyry. Franklin Co., near Pinch Gut.
3674, (1369,) Orthofelsite. Ditto.
3675, (1370,) Mountain creek rock. Rocky Ridge 2½ miles west from Caledonia.
3676, (1371,) Dark blue limestone. Oatey's house 3 m. S. E. from Chambersburg.
3677, (1372,) Hard "jaspery" dark orthofelsite porphyry. Franklin Co. Pinch Gut, near Mont Alto.
3678, (1373,) Compact, chloritic hydro mica-schist. ½ m. S. of Chickies, Lancaster Co.
3679, (1374,) Flaggy orthofelsite, containing epidotic matter. 1 m. S. W. from Newman's.
3680, (1375,) Slaty orthofelsite porphyry. 2 m. S. from Graeffenburg, Adams Co.
3681, (1376,) Mountain Creek rock. 3 m. N. E. from Caledonia, Adams Co.
3682, (1377,) Diabase (?) 2 miles S. from Graeffenburg.
3683, (1378,) Jaspery orthofelsite. 1 mile S. W. from Newman's.
3684, (1379,) Quartzite. 3 miles south from Mount Union on turnpike.
3685, (1380,) Gray sandy limestone. Columbia, Lancaster Co., 592 paces W. of bridge.
3686, (1381,) Quartzite, weathered. Resembling sandstone. 2 miles S. W. from Newman's.
3687, (1382,) Light bluish-red orthofelsite porphyry. McConanghy's saw-mill.

3688, (1383,) Epidotic rock with quartz grains. 2 miles S. from Graeffenburg.

3689, (1384,) Orthofelsite porphyry. One mile N. of Caledonia Springs.

3690, (1385,) Quartzose sandstone. ¾ m. from Fiddler's Green, in road, near run in Green hollow.

3691, (1386,) Orthofelsite. Raccoon Creek 1½ m. S. from Caledonia.

3692, (1387,) Trap–Diabase (?) Pinch Gut.

3693, (1388,) Slaty orthofelsite, enclosing steatite (?) Buchanan Valley, 2 m. N. of G. Cole's.

3694, (1389,) Weathered Orthofelsite fragments. ½ m. S. from Cashtown.

3695, (1390,) Greenish new red S. S. fragment with specks of magnetite (?). 3 m. N. W. of Fairfield.

3696, (1391,) Compact chlorite rock. 2½ m. N. of Bingham's.

3697, (1392,) Ferruginous slate. Ditto.

3698, (1393,) Orthofelsite porphyry. 3 m. W. of S. from Cashtown.

3699, (1394,) Chlorite slate, enclosing nodules of epidote. ½ m. E. of Willow Grove-Hilltown road.

3700, (1395,) Fine-grained schistoze conglomerate. 2½ m. S. W. of Miltonberger's Mill.

3701, (1396,) Slaty orthofelsite porphyry. 2 miles north from Fairfield.

3702, (1397,) Finely laminated crystalline slate. 1 mile N. from Bingham's.

3703, (1398,) Chlorite rock. 2 miles ditto.

3704, (1399,) Mountain Creek rock. On Green Ridge, 2 miles south from the Gettysburg-Chambersburg turnpike.

3705, (1400,) Chlorite slate with interstratified quartz containing specular iron ore. 2 miles N. W. from G. Coles.

3706, (1401,) Fine-grained Mountain Creek rock. 1 m. S. W. ditto.

3707, (1402,) Diabase (?). 2½ miles S. W. from Cashtown.

3708, (1403,) Much weathered orthofelsite porphyry, with hydro-mica schist. 1 m. S. W. from F. Coles'.
3709, (1404,) Pink, orthofelsite porphyry. 2½ miles S. W. from Cashtown.
3710, (1405,) Weathered, argillaceous orthofelsite slate. 2 m. N. W. from Arendsville.
3711, (1406,) Thin-bedded slaty orthofelsite porphyry. 1 m. N. W. from Willow Grove.
3712, (1407,) Ferruginous slate. 2 m. N. from Bingham's.
3713, (1408,) Milky quartz containing micaceous-ore. 2 m. N. from Cole's saw mill.
3714, (1409,) Orthofelsite porphyry. 2 m. N. from Frank Coles.
3715, (1410,) Orthofelsite porphyry reddish-blue. ½ m. S. E. ditto.
3716, (1411,) Compact chlorite schist. ½ m. N. W. ditto.
3717, (1412,) Weathered hydro mica slate. ½ mile S. W. from G. Coles' saw-mill, Adams Co., Pa.
3718, (1413,) Diabase with stellate crystals of chlorite. 3 miles N. W. from Frank Coles', Adams Co.
3719, (1414,) Compact orthofelsite. ½ mile S. E. from F. Coles' saw-mill.
3720, (1415,) Orthofelsite with spots of epidote. 3 miles W. of S. of Cashtown.
3721, (1416,) Orthofelsite. S. from G. Coles' saw-mill.
3722, (1417,) Decomposed rock. ½ mile S. W. from Cashtown.
3723, (1418,) White Mountain Creek rock. 4 miles S. E. from Pilzer's Hill.
3724, (1419,) Epidotic rock. 3½ miles N. E. from Thirfield.
3725, (1420,) Diabase (?). 1 mile S. W. from Cashtown.
3726, (1421,) Mountain Creek rock. 3½ miles N. E. from Caledonia Furnace.
3727, (1422,) Orthofelsite (?). ¼ mile N. E. from Caledonia Furnace.
3728, (1423,) Quartz with micaceous iron ore. 2 miles S. W. from Cashtown.
3729, (1424,) Mountain Creek rock, banded with quartz. 1 mile S. W. from G. Coles' saw-mill.

3730, (1425,) Mountain Creek rock. 1 mile S. from Miltonberger's saw-mill.
3731, (1426,) Orthofelsite porphyry. ½ mile S. E. from F. Coles' saw-mill, Adams Co.
3732, (1427,) Slaty orthofelsite porphyry. ½ mile S. W. from G. Coles' saw-mill, Adams Co.
3733, (1428,) Quartzite. ½ mile S. W. from Cashtown.
3734, (1429,) Diabase (?). 3½ miles N. from Millerstown.
3735, (1430,) Orthofelsite porphyry. Frank Cole's house.
3736, (1431,) Orthofelsite porphyry. ¾ mile S. E. from —— Buchanan Valley.
3737, (1432,) Orthofelsite porphyry. 3 miles W. of S. from Cashtown.
3738, (1433,) Schistoze matrix of Mountain Creek rock. 1½ miles N. W. from Geo. Cole's saw-mill.
3739, (1434,) Ferruginous conglomerate. 4 miles S. W. from Shippensburg.
3740, (1435,) Mountain Creek rock, (weathered.) 1½ miles S. from Willow Grove.
3741, (1436,) Orthofelsite, (weathered.) 2½ miles S. W. from from Arendtsville.
3742, (1437,) Lower mesozoic shales. 2½ miles N. from Fairfield.
3743, (1438,) Quartzite. 3½ miles N. from Fairfield.
3744, (1439,) Mountain Creek rock. 1½ miles S. W. of Willow Grove.
3745, (1440,) Slaty orthofelsite porphyry. 3 miles W. of S. of Cashtown.
3746, (1441,) Melaphyre (?). 2 miles S. W. of Willow Grove.
3747, (1442,) Chlorite slate. 2 miles N. W. of Arendtsville.
3748, (1443,) Matrix of Mountain Creek rock, and finely laminated hydro-mica schist. ⅔ miles N. of Newman's.
3749, (1444,) Melaphyre (?). 2 miles N. E. of G. Cole's.
3750, (1445,) Clay slate. ½ mile S. E. of F. Cole's.
3751, (1446,) Orthofelsite porphyry. 1 mile N. of Bingham's.
3752, (1447,) Mountain Creek rock, large pebbles enclosed in schist. 1 mile west of G. Cole's.

3753, (1448,) Epidotic rock. 3 miles N. W. of F. Cole's.
3754, (1449,) Fine-grained granitic rock. This specimen looks like a granite, but it may be a compact member of the Mesozoic S. S., made from the débris of orthoclase, quartz, and micas from the older Huronian rocks. 1½ miles N. W. from Cashtown.
3755, (1450,) Slaty orthofelsite. 1½ miles W. of Willow Grove.
3756, (1451,) Compact orthofelsite with micaceous iron ore. 1¼ miles S. W. of F. Cole's Saw Mill.
3757, (1452,) Slaty orthofelsite porphyry. 2 miles N. W. of F. Cole's.
3758, (1453,) Orthofelsite porphyry, containing red crystals and grains of quartz. 2 miles N. of Newman's.
3759, (1454,) Copper-rock, diabase (?). ⅔ of a mile E. of Willow Grove.
3760, (1455,) Blue orthofelsite. 2 miles N. of Cashtown.
3761, (1456,) Outcrop of ferruginous clay from old ore bank. Wharton Furnace, (Bomberger's.)
3762, (1457,) Compact blue slate. 3 miles S. of Cashtown.
3763, (1458,) Banded orthofelsite. 2½ miles S. W. of Arendtsville, brow of South East ridge of South Mountain.
3764, (1459,) Orthofelsite porphyry. 2½ miles S. W. of Willow Grove.
3765, (1460,) Orthofelsite porphyry, (weathered.) ½ mile S. E. of F. Cole's.
3766, (1461,) Impure limonite. 3½ miles S. of E. from Chambersburg.
3767, (1462,) Striated orthofelsite, (jaspery variety.) ¾ mile N. from Hilltown.
3768, (1463,) Mountain Creek rock, reddish blue schist matrix. 2½ miles S. from Miltonberger's Mill.
3769, (1464,) Orthofelsite. 1 mile S. W. from Cashtown.
3770, (1465,) Chlorite slate. 3 miles S. W. from Willow Grove.

3771, (1466,) Coarse, quartz conglomerate. 2½ miles S. from Pilzer's.

3772, (1467,) Argillaceous crystalline schist. 1½ miles E. of N. from Hilltown.

3773, (1468,) Orthofelsite porphyry. ½ mile S. E. from F. Cole's.

3774, (1469,) Argillaceous decomposed slates, (orthofelsite.) 2½ miles N. E. from F. Cole's, near Chas. Stewart's house.

3775, (1470,) Orthofelsite porphyry. 1 mile N. E. from Cole's saw-mill.

3776, (1471,) *Orthoceras* of Trenton epoch. Chambersburg.

3777, (1472,) Ferruginous slate. Cold Spring ravine.

3778, (1473,) Iron-stained sandstone. 3½ miles N. W. from Fayetteville.

3779, (1474,) White quartzite. 5 m. N. E. from Fayetteville, Cold Spring ravine.

3780, (1475,) Mountain Creek rock, with small quartz pebbles. Head of Cold Spring creek ravine.

3781, (1476,) Quartzite. Dip S. W. 25°. 3 miles N. W. from Fayetteville.

3782, (1477,) Mountain Creek rock. 4 miles N. W. from Fayetteville.

3783, (1478,) Quartzose S. S. and limonite. Locust Spring, 2½ m. N. E. from Greenwood.

3784, (1479,) Quartz. 1 mile N. E. from Greenwood.

3785, (1480,) Sandstone. Dip S. W. 25°. Philaman's run, 3 miles N. W. of Fayetteville.

3786, (1481,) Impure limonite. Ferguson's well, Fayetteville.

3787, (1482,) Quartzy S. S. resembling quartzite. Cold Spring Gap, 3½ miles N. E. of Fayetteville.

3788, (1483,) Quartz slate. ½ mile N. E. from Fayetteville.

3789, (1484,) Quartzite incrusted with iron-ore. Near Locust Springs, 3 miles N. E. of Greenwood.

3790, (1485,) Fine grained quartzite with *Scolithus linearis*. 5¼ miles N. E. from Fayetteville.

3791, (1486,) Friable, yellow S. S. intersected with vein of quartz. Cold Spring creek, 4¼ miles N. E. of Fayetteville.

3792, (1487,) Ferruginous sandstone. ½ mile N. from Shippensburg.
3793, (1488,) Impure limonite. 2½ miles N. E. of Greenwood, just west from Locust Spring, in Knob.
3794, (1489,) Quartzite. 2½ miles N. W. from Fayetteville.
3795, (1490,) Calcareous slate. 1½ miles N. of W. of Fayetteville, "Downey's Hill."
3796, (1491,) Stained sandstone. 2½ miles N. of W. from Greenwood.
3797, (1492,) Quartzite. 3 miles N. E. from Greenwood.
3798, (1493,) Quartzite. Head of Cold Spring creek.
3799, (1494,) Quartz. Near Cold Spring creek ravine, 5 miles N. E. from Fayetteville.
3800, (1495,) Ferruginous sandstone. 3½ miles N. E. from Greenwood.
3801, (1496,) S. S., curiously stained from infiltration along cleavage planes. Philaman's run, ½ mile N. from Shippensburg road.
3802, (1497,) Friable quartz sandstone. 2 miles N. from Greenwood.
3803, (1498,) Quartzite pebbles. 1½ miles W. of N. from Fayetteville, Franklin Co.
3804, (1499,) Quartz sandstone with *Scolithus*. 6 miles N. E. from Fayetteville.
3805, (1500,) Banded limestones. 2 miles W. of N. from Fayetteville.
3806, (1501,) Quartzose sandstone. Cold Spring ravine, 4 miles N. from Fayetteville.
3807, (1502,) Mountain Creek rock. ¼ mile west from Greenwood.
3808, (1503,) Stained quartz sandstone. Near Philaman's run, 3 miles N. from Fayetteville.
3809, (1504,) Ferruginous conglomerate. 2½ miles N. E. from Greenwood.
3810, (1505,) Quartzite. ½ mile N. from Shippensburg.
3811, (1506,) Stained sandstone. 4 miles N. E. from Fayetteville.
3812, (1507,) Quartzite. Cold Spring ravine, 5 miles N. E. of Fayetteville.

3813, (1508,) Variegated quartzite. 2 miles N. from Greenwood.
3814, (1509,) Banded red sandstone. 3½ miles N. E. from Fayetteville.
3815, (1510,) Quartzite, intersected with quartz. 4½ miles N. E. from Fayetteville.
3816, (1511,) Quartz sandstone. ½ mile W. from Greenwood.
3817, (1512,) Stained sandstone. 4 miles N. E. from Fayetteville.
3818, (1513,) Fine grained quartzite. Ditto.
3819, (1514,) Arenaceous, ferruginous slaty S. S. Ditto.
3820, (1515,) Quartzite. 3 miles N. from Greenwood.
3821, (1516,) Weathered quartzite with ore coating. 3¼ miles N. from Greenwood.
3822, (1517,) Quartzite with *Scolithus linearis*. Cold Spring Creek, 5 miles N. E. from Fayetteville.
3823, (1518,) Quartz, with coating of micaceous ore. 1 mile N. E. from Greenwood.
3824, (1519,) Weathered quartzite. 1 mile N. of W. from Fayetteville.
3825, (1520,) Fibrous quartz vein in sandstone.
3826, (1521,) Fine grained quartzite with *Scolithus*. 2½ miles N. E. from Greenwood.
3827, (1522,) Quartzite. 5 miles N. E. from Fayetteville.
3828, (1523,) Yellow clay on ore 29′ below surface. Ferguson's well, Fayetteville.
3829, (1524,) Quartzite. 1 mile N. E. from Greenwood.
3830, (1525,) Ferruginous slate. 4 miles N. E. from Fayetteville.
3831, (1526,) Yellow clay slate. Bottom of Ferguson's well, Fayetteville.
3832, (1527,) Chlorite slate, enclosing pebbles of quartz. Base looks like diabase. 300 ft. E. of Willow Grove, on Gettysburg, Chambersburg pike.
3833, (1528,) Fine grained quartzite. 3 miles N. E. from Fayetteville.
3834, (1529,) Fine grained quartzose sandstone. Ditto.

3835, (1530,) Yellow clay. 25 ft. below surface, Ferguson's well, Fayetteville.

3836, (1531,) Quartzite with *Scolithus*. 3 miles N. E. from Fayetteville.

3837, (1532,) Quartzite. Cold Spring Creek Valley, 5½ miles from Fayetteville.

3838, (1533,) Fine grained quartzite. 4½ miles N. E. from Fayetteville.

3839, (1534,) Epidote in orthofelsite (?) 1 mile E. from Newman's.

3840, (1535,) Argentiferous galena and calamine. Bamford's Zinc Furnace, Lancaster Co., Pa.

3841, (1536,) Quartz. ¾ mile N. W. from Fayetteville.

3842, (1537,) White clay. Surface of ground, Ferguson's well, Fayetteville.

3843, (1538,) Chlorite slate (?) 1 mile S. W. from Pinch Gut, Mont Alto and Fairfield road.

3844, (1539,) Copper ore. South Mountain, 3 miles N. E. from Monterey Springs.

3845, (1540,) Hard, dark blue limestone, streaked with quartz. 2 miles S. E. from Chambersburg.

3846, (1541,) White, friable sandstone. 5 miles S. E. from Shippensburg.

3847, (1542,) Impure iron-ore. Wharton's ore-bank No. 1, 4 miles S. W. from Shippensburg.

3848, (1543,) Pink quartzite. 4 miles S. W. from Shippensburg.

3849, (1544,) Soft chlorite and quartz. 3 miles N. E. from Monterey Springs.

3850, (1545,) Friable sandstone. 3 miles N. from Scotland.

3851, (1546,) Sandstone and quartzite. From pile in road. 2 miles N. from Lancaster.

3852, (1547,) Fissile quartz, friable. 2½ miles S. E. from Fiddlers Green, Dan'l Pleck's Hollow.

3853, (1548,) Float iron-ore. No trace of magnetism. R. Bomberger's Farm, 4 miles S. E. from Shippensburg.

3854, (1549,) Argillaceous iron-ore. Geo. Clever's Old Wharton Furnace, 4 miles S. E. from Shippensburg.

3855, (1550,) Orthofelsite porphyry. 1½ miles S. E. from Graffenburg.

3856, (1551,) Quartz fragment. 1½ miles E. of N. from Greenwood.

3857, (1552,) Missing.

3858, (1553,) Compact limonite and hematite. 1 mile North from Greenwood.

3859, (1554,) Red and yellow clay from sides of Wharton ore-bank No. 1. 4 miles S. W. from Shippensburg.

3860, (1555,) Diabase (?) Union Hope, 1 mile W from Cashtown.

3861, (1556,) Chlorite schist. Newman's.

3862, (1557,) Limonite. Geo. Clever's, 4 miles S. E. from Shippensburg.

3863, (1558,) Compact quartzose sandstone. 1 mile N. E. from Greenwood.

3864, (1559,) Impure limonite. 3½ miles S. of E. of Chambersburg.

3865, (1560,) Impure limonite. Conrad Plaster's bank, 5½ miles S. E. from Shippensburg, Pa.

3866, (1561,) Large fragments of feldspar imbedded in chloritic slate. Cashtown, Adams Co., Pa.

3867, (1562,) Impure limonite. Jacob Myer's bank, N. from Greenwood.

3868, (1563,) Quartz conglomerate. 2½ miles N. from Fayetteville.

3869, (1564,) Brown quartzite. Philaman's run, 4 miles N. W. from Fayetteville.

3870, (1565,) Mountain Creek rock, very large pebbles. 1 mile N. from Greenwood.

3871, (1566,) "Black ore" manganiferous (?) 1 mile N. E. from Greenwood, Unger's bank; Myers' farm.

3872, (1567,) Impure limonite. Philaman's run, 3½ miles N. W. from Fayetteville.

3873, (1568,) Iron ore. Jacob Unger's bank, 1 mile N. E. from Greenwood.

3874, (1569,) Very coarse quartz conglomerate attached to quartzite. Unger's Farm, 1 mile N. from Greenwood.

3875, (1570,) Milk quartz. Philaman's run, 4 miles N. W. of Fayetteville.

3876, (1571,) Impure limestone. Downey's quarry, 1½ miles N. W. of Fayetteville.

3877, (1572,) Float iron ore, limonite and hematite. 1 mile N. E. from Greenwood.

3878, (1573,) Light colored Mountain Creek rock. Birch Run, 5 miles from Caledonia Furnace.

3879, (1574,) Mountain Creek rock. 1½ miles W. of S. from Caledonia.

3880, (1575,) Limonite. 4 miles N. W. from Fayetteville.

3881, (1576,) Dark blue limestone, specked with calcite. 1½ miles S. E. from Chambersburg.

3882, (1577,) Blue limestone, streaked with calcite. 1 mile S. E. from Chambersburg.

3883, (1578,) Arenaceous slate. 1,870 ft. W. from Columbia bridge, Lancaster Co.

3884, (1579,) Dark blue crystalline limestone. Dip S. E. 50°–55°. C. Bomberger's quarry, 3½ miles S. E. of Shippensburg.

3885, (1580,) Dark blue weathered limestone. 2½ miles S. E. from Chambersburg.

3886, (1581,) Copper ore. From Russel, or other mine, 3 miles N. E. from Monterey Springs, Franklin Co.

3887, (1582,) Dark blue crystalline limestone. 1 mile S. from Shippensburg.

3888, (1583,) Hydro mica slate. 200 ft. E. from Tunnel, ½ mile W. from Columbia Bridge, Lancaster Co., Pa.

3889, (1584,) Banded orthofelsite. 2 miles S. E. from Caledonia Furnace, up West branch of Raccoon creek.

3890, (1585,) Sandy slate, enclosing octahedra of magnetic ore. 2 miles S. E. from McConaughy's Saw mill.

3891, (1586,) Weathered orthofelsite porphyry. ½ mile S. W. from Caledonia.
3892, (1587,) Sandy mica schist, carrying quartz. Willow Street Hotel, 5 miles S. from Lancaster.
3893, (1588,) Red arenaceous clay. 5 miles E. from Shippensburg.
3894, (1589,) Yellowish white quartzite. 4 miles N. from Caledonia Furnace.
3895, (1590,) Impure limonite. 3 miles S. E. from Shippensburg.
3896, (1591,) Impure limonite and hematite. Wharton's Old ore bank, (now S. Bitner's.)
3897, (1592,) Dark blue limestone. Strike N. 30° E. Dip vertical. 1½ miles S. E. from Chambersburg.
3898, (1593,) Orthofelsite, stained with iron rust. ½ mile S. W. from Caledonia.
3899, (1594,) Calcareous chlorite slate. 2½ miles N. from Lancaster, near P. and R. R. Bridge on the Little Conestoga creek.
3900, (1595,) Quartzite with some micaceous matter. 5 miles S. E. from Shippensburg.
3901, (1596,) Slaty Mountain Creek rock. Top of mountain, 2 miles N. from Beamer's mill.
3902, (1597,) Felsitic slate. 2 miles S. W. from Caledonia.
3903, (1598,) Laminated schist with quartz pebbles. Newman's, Chambersburg and Gettysburg Pike.
3904, (1599,) Quartzite with argillaceous matter. 2 miles S. E. from Fiddler's Green, Green's Hollow.
3905, (1600,) Slaty orthofelsite. 2 miles S. W. from Caledonia Furnace.
3906, (1601,) Dark orthofelsite porphyry (?) 1 mile N. from Newman's.
3907, (1602,) Dark orthofelsite porphyry (?) 1 mile from Carbaugh's saw-mill.
3908, (1603,) Bright red earth. 5 miles S. E. from Shippensburg.
3909, (1604,) Quartz fragments. ½ mile W. from Newman's.
3910, (1605,) Calcareous (hydro-mica) slate decomposed.
3911, (1606,) Jaspery felsite.

3912, (1607,) Orthofelsite, decomposed. Section along the Susquehanna, south of Wrightsville?

3913, (1608,) Chloritic slate, crypto-crystalline.

3914, (1609,) Hydro-mica schist.

3915, (1610,) Weathered felsitic slate. At first glance resembles in structure the matrix of Mountain Creek rock. Near McConaughy's saw-mill.

3916, (1611,) Quartz grains cemented together with argillaceous material. This rock may represent one of the stages of Mountain Creek rock in which the quartz is predominant, and the schist subordinate in amount and much altered. 2 miles S. E. from Fiddler's Green, Green's Hollow.

3917, (1612,) Fissile milk quartz. Philaman's Run, Gap, 3½ miles S. E. from Scotland.

3918, (1613,) Orthofelsite, (bedded.) 2 miles N. E. from Toby Kauffman's.

3919, (1614,) Reddish-blue orthofelsite porphyry. N. E. 30°. 2 miles S. from Graffenburg, top of ridge.

3920, (1615,) Orthofelsite porphyry. 1 mile N. from McConaughy's Saw-mill.

3921, (1616,) Slaty Mountain Creek rock with ferruginous seam. 1½ miles S. E. from Caledonia.

3922, (1617,) Banded orthofelsite porphyry, (conchoidal fracture.) 1 mile S. from Turnpike, near Newman's, top of ridge.

3923, (1618,) Quartzite with some intermixed felsite. ¼ mile S. E. from Fiddler's Green, Green Hollow.

3924, (1619,) Trap, (bedded.) 4 miles S. from Caledonia.

3925, (1620,) Quartz grains with ore on quartz S. S. (?) 2 miles N. from Caledonia Springs.

3926, (1621,) Friable, ferruginous quartz sandstone. 5 miles S. E. from Shippensburg.

3927, (1622,) Copper ore. Copper mine near Monterey Springs.

3928, (1623,) Diabase (metadiabase (?) ¼ mile W. from Newman's.

3929, (1624,) Zince blende in limestone. Herr's Zinc mine, 3 miles N. from Lancaster.

3930, (1625,) Bedded, orthofelsite porphyry. 2 miles S. from Graffenburg.

3931, (1626,) Mountain Creek rock. 2 miles W. of S. from Caledonia.

3932, (1627,) Banded, jaspery orthofelsite. 1½ miles S. E. from Graffenburg.

3933, (1628,) Compact quartzose S. S., with *Scolithus*. 4 miles N. W. from Fayetteville.

3934, (1629,) Felsitic quartzite. Between Gilbert's and Monterey Springs, 5½ miles from Waynesboro'.

3935, (1630,) Quartzite. Piney run, near Birch run, 4 miles S. (?) of Caledonia.

3936, (1631,) Orthofelsite porphyry. Carbaugh's saw-mill, 3 miles S. E. from Graffenburg.

3937, (1632,) Red orthofelsite porphyry. 1 mile N. E. from Pinch Gut.

3938, (1633,) Quartzose schist, (Mountain Creek rock.) Top of mountain, on old Baltimore road, 5 miles S. E. from Cleversburg.

3939, (1634,) Orthofelsite. 1 mile S. from Pinch Gut.

3940, (1635,) Orthofelsite porphyry. ¾ mile N. W. from Caledonia Springs.

3941, (1636,) Trap, (diabase (?). 1 mile S. from Pinch Gut.

3942, (1637,) Fine grained saccharoidal sandstone. ¾ mile S. E. from Fiddler's Green, in Green's Hollow.

3943, (1638,) Compact greenish blue limestone. Shauffler's mill, 1½ miles S. E. from Chambersburg.

3944, (1639,) Dark blue limestone. 2 miles S. E. from Chambersburg, Fronoyer's house, in quarry N. of creek.

3945, (1640,) Light blue limestone. Myer's house, Baltimore turnpike, 1 mile S. E. from Chambersburg.

3946 to 4143—PERSIFOR FRAZER, Jr—1877.

3946, (1700,) Ferruginous slate with efflorescence. Slate quarry 1 mile S. from Columbia bridge, Lancaster Co., Pa.

3947, (1701,) Slate. Commencement of curve below Turkey Hill station, C. and P. D. R. R., 8½ miles S. from Columbia, Lancaster Co., Pa.

3948, (1702,) Pyritiferous limestone intercalated in slates. 2d quarry S. E. from Strickler's run, Lancaster Co.

3949, (1703,) Limestone. Dip nearly vertical N. 10° W. 30 metres S. E. from Turkey Hill station, C. and P. D. R. R.

3950, (1704,) Limestone. 1 mile N. from Safe Harbor, in quarry.

3951, (1705,) Mica schist with imbedded crystals. ½ mile N. W. from Cully's station, C. and P. D. R. R.

3952, (1706,) Hard silicious mica slate with seams of quartz. Peach Bottom quarry, Lancaster Co.

3953, (1707,) Gneiss. S. E. border of Trap Dyke, 66 feet above R. R., ¼ mile S. E. from Safe Harbor, Lancaster Co.

3954, (1708,) Garnet in mica schist. Two miles N. W. from McCall's Ferry. Ditto.

3955, (1709,) Much decayed mica schist. ⅔ mile north from Safe Harbor. Ditto.

3956, (1710,) Trap intersecting mica schist. 1000 feet S. E. from mouth of Conestoga creek. Ditto.

3957, (1711,) Chloritic hydro mica schist. ¼ mile N. W. from Peach Bottom quarry. Ditto.

3958, (1712,) Mica schist enclosing brown mineral. Near Cully's station, C. and P. D. R. R. (?) Ditto.

3959, (1713,) Calcareous hydro mica slate. 170 feet S. E. from Strickler's run. Ditto.

3960, (1714,) Gneissoid mica slate enclosing black crystals. Cully's station, C. and P. D. R. R. Ditto.

3961, (1715,) Trap boulder. Opposite Mr. Seiple's house, Washington town. Ditto.

3962, (1716,) Calcaroid hydro mica slate. 300 feet S. E. of school house, river bank, Washington town. Ditto.

3963, (1717,) Impure limestone. ½ mile W. from 3d mile dam, N. W. from Safe Harbor.

3964, (1718,) Manganiferous limonite. Grubb's bank, 1½ miles S. E. from Safe Harbor.

3965, (1719.)

3966, (1720,) Quartzite, with white plates of quartzite and small veins of limonite. 78 metres (306′) S. E. from Chickies Furnace, Lancaster Co.

3967, (1721,) Quartz with imbedded crystals of hornblende (?). Taken from Chickies anticlinal by S. S. Haldeman.

3968, (1722,) Clay. 340 feet S. E. from Shock's Mill station, P. R. R., from Musser's brick-clay bank, Lancaster Co.

3969, (1723,) Brick from clay. 340 feet S. E. from Shock's Mill station, P. R. R., Musser's brick yard.

3970, (1724,) Calcareous slates, (ripple marked.) 1 mile S. E. from Bainbridge.

3971, (1725,) Trap from dyke on R. R. Just N. W. from Keller's Trap quarry, ½ mile from Collins', and the same distance from Falmouth station, P. R. R.

3972, (1726,) Trap. Keller's Trap quarry, near Falmouth.

3973, (1727,) Trap. Outcrop on R. R., just N. W. from Collin's, and S. E. from Keller's quarry, Falmouth station, P. R. R.

3974, (1728,) Hard rock, resembling limestone. Falmouth station, 4 miles N. W. from Bainbridge.

3975, (1729,) Magnetic iron ore. Limestone Hill, by John Haldeman's, close by trap dyke, which forms its nucleus, 5 miles N. W. from Marietta.

3976, (1730,) Indurated sand rock. 164 feet E. of Falmouth station.
3977, (1731,) Botryoidal, stalactitic iron ore. E. B. Grubb & Haldeman's (Chestnut Hill) ore bank.
3978, (1734,) Red clay. Strike about E. C. B. Grubb's ore bank. Ditto.
3979, (1735,) Hollow, kidney shaped nucleus of bomb, 9 in. in diameter. Ditto.
3980, (1736,) Göthite, etc., and Glance iron ore. Ditto.
3981, (1737,) Bombs of limonite. Ditto.
3982, (1738,) Quartz slate. Bottom of 70 ft. shaft, "Rock shaft, (Chestnut Hill) ore bank.
3983, (1739,) Magnetic micaceous iron ore. 6 metres S. E. from Rock shaft, Chestnut Hill Mining Co.
3984, (1740,) Hydro micaceous quartz slate. Chestnut Hill (Nourse's) Mining Co. "Rock shaft."
3985, (1741,) Micaceous, slightly magnetic ore. Dinchay Ridge, Nourse's Chestnut Hill Mining Co.
3986, (1742,) Red iron oxide, Float ore. S. of middle part of Chestnut Hill bank.
3987, (1743,) Float ore. Middle part of. Ditto.
3988, (1744,) Fine grained quartz conglomerate. Dividing Ridge, Chestnut Hill Mining Co., in same hill as "Rock shaft," and 330 feet from it.
3989, (1745,) *Scolithus linearis.* Chickies Rock.
3990, (1746,) Specular iron ore. Chickies Rock. Ditto.
3991, (1747,) Milk quartz with fragments of calcareous slate, with some pyrite, specular ore, and some copper ore, associated with trap dyke, which causes it. Sent to Prof. S. S. Haldeman by Mr. Wylie of Haldeman Rip Rapp.
3992, (1748,) Best limestone. Chickies quarry.
3993, (1749,) Poorest limestone. Ditto.
3994, (1750,) Hard, blue limestone. Ditto.
3995, (1751,) Sandy limestone. Ditto.
3996, (1752,) Massive slate (best quality). Jno. Humphrey's quarry, York Co., Pa.
3997, (1753,) Mica schist, intersected with quartz veins. 550 feet N. from Tom. Cooney's hotel.

3998, (1754,) Chlorite slate, quartz and manganite. William's & Co.'s slate quarry, 1 mile S. W. from Delta, York Co., Pa.

3999, (1755,) Serpentine. Quarry just S. W. from main shaft, Harford Co., Md., 5 miles S. E. from Peach Bottom Ferry.

4000, (1756,) Magnetic occurring with serpentine. S. E. from Peach Bottom Ferry 5 miles, and N. E. from Serpentine quarry.

4001, (1757,) Serpentine and steatite. Harford Co., Md., quarry 5 miles S. E. from Peach Bottom Ferry.

4002, (1758,) Red iron oxide (silicious). Mouth of serpentine quarry, 5 miles S. E. from Ferry.

4003, (1759,) Slate. Jno. Humphrey's slate quarry, E. of West Bangor, York Co., Pa.

4004, (1760,) Vein matter with enclosing rocks. $\frac{1}{2}$ mile S. E. from Peach Bottom (Wm. M. Lee), Fairfield, Greene P. O.

4005, (1761,) W. H. Spencer's farm, $3\frac{1}{2}$ miles E. from Peter's Creek, Fulton Twp.

4006, (1762,) Magnetite in quartz from loose specimens in the field. Near Grand Templar's Springvale Lodge, Drumore Twp., Lancaster Co.

4007, (1763,) Magnetite, found loose in field. 2 miles west of Buck P. O.

4008, (1764,) White, micaceous sandy schists adjacent to Peach Bottom slate ridge. 330 feet S. E. of McClenahan's slate quarry.

4009, (1765,) Green sandy mica schist. Penrose's (now Hess') mill, Fishing creek, Lancaster Co.

4010, (1766,) Göthite. Eshleman's house, 2 miles W. from Buck P. O.

4011, (1767,) Green mica schist, Fuchsite (?), Chlorite schist. Ditto.

4012, (1768,) Wavy argillaceous slate. McClenahan's (Peach Bottom) slate quarry near Fairfield.

4013, (1769,) Pyrolusite (?) and limonite, surface specimen. $\frac{1}{8}$ mile E. of N. of G. Lamborn's house.

4014, (1770,) Hematite. Eshleman's Farm, 2 miles W. from Bucks P. O.

4015, (1771,) Green mica schist with decomposed feldspar. Penrose's (Hess') mill, 1½ miles west from Chestnut Level.

4016, (1772,) Serpentine steatite. A. Flaherty's opening, 2½ miles S. E. from Peter's creek.

4017, (1773,) Serpentine, mammillary quartz, steatite, magnetite. Boyer's farm, 1½ miles E. of S. from Texas, Fulton Twp., Lancaster Co.

4018, (1774,) Testaceous and sandy limonite. Eckman & Patterson's mine, Providence Twp., Lancaster Co., 1½ miles S. from New Providence.

4019, (1775,) Ferruginous gneiss; or Göthite and geodes containing gneiss dust. Cabeen's mine, 1½ miles N. W. from Quarryville, Eden township, Lancaster Co.

4020, (1776,) Ferruginous mica schists, geodes containing mica dust. New Providence, back of Merchant's Hotel, Providence Twp.

4021, (1777,) Ferruginous mica schist, limonite. Ditto.

4022, (1778,) Conglomerate of limpid quartz in brown limestone. Opposite Jos. Hopkins house, Eden Twp., Lancaster Co., 1½ miles E. from C P. O.

4023, (1779,) Testaceous limonite and ferruginous gneiss from dump, alongside ore bank. Mourer's Farm, 1 mile S. W. from New Providence, Providence Twp., Lancaster Co.

4024, (1780,) Micaceous crystalline limestone from pit 50 feet below surface. Eckman & Patterson's mine, alongside barn of Silas Winter's, 1½ miles S. from New Providence.

4025, (1781,) Ferruginous mica schist. Peacock mine, behind barn, New Providence.

4026, (1782,) Limonite, septata and laminated quartz. Cabeen's mine, 1½ miles N. W. from Quarryville, Eden Twp., Lancaster Co.

4027, (1783,) Limonite, göthite, ferruginous gneiss, and geodes. Ditto.
4028, (1784,) Picrolite. Wood's mine.
4029, (1785,) Micaceous brucite. Ditto.
4030, (1786,) Magnetite. Ditto.
4031, (1787,) Serpentine (?) Ditto.
4032, (1788,) Brucite, lancasterite. Ditto.
4033, (1789,) Minute mammillary zaratite. Ditto.
4034, (1790,) Zaratite; brucite; chromite. Ditto.
4035, (1791,) Zaratite, chromite. Ditto.
4036, (1792,) Zaratite, chromite, brucite. Ditto.
4037, (1793,) Talc. Ditto.
4038, (1794,) Brucite. Ditto.
4039, (1795,) Brucite. Ditto.
4040, (1796,) Chromite. Ditto.
4041, (1797,) Chromite. Ditto.
4042, (1798,) Chromite, zaratite. Ditto.
4043, (1799,) Lancasterite or serpentine. Ditto.
4044, (1800,) Chrome sand. Black Bottom branch near Wood's mine.
4045, (1801,) Picrolite. Wood's mine.
4046, (1802,) Serpentine, magnetite, steatite, zaratite, &c. Lime pit and Low's mine.
4047, (1803,) Pebbles of Oneida conglomerate. Drift. Blake's grain yard, fork of roads between Griffith Stubbs and Louis Haines, Fulton Twp., Lancaster Co.
4048, (1804,) Banded jasper. Bed of Rock Spring run, Fulton Twp.
4049, (1805,) Rock out of which Rock Spring issues. Rock Spring, Fulton Township.
4050, (1806,) Vein matter in vein. Williamson's Point, 1½ miles N. from State Line, Columbia and Port Deposit R. R.
4051, (1807,) Trap cutting off ore. West face of Grassy Hill, Cornwall.
4052, (1808,) Trap. N. W. bounding wall of Middle hill (N. bounding wall ± 185 ft. above water level.)

4053, (1809,) Trap. Throughout of Middle Hill. Dyke in middle of ore, Cornwall.
4054, (1810,) Fine-grained trap. First bench of Big Hill, (in midst of ore,) Cornwall.
4055, (1811,) Limestone, intersected by small veins of ore (dipping ± N. W.) Sand slide, S. from Middle Hill, Cornwall.
4056, (1812,) Dendritic markings on limestone. Cornwall ore-bank, Cornwall.
4057, (1813,) Limestone.
4058, (1814,) Crystalline limestone.
4059, (1815,) Serpentine in limestone. Cornwall ore-mine, Cornwall.
4060, (1816,) Specimen of No. 1 ore, free from sulphur and usually soft. S. W. from Middle Hill; 80 metres east from hole No. 4, Cornwall.
4061, (1817,) Seam of impure limestone with crystals of magnetite. Sand slide south from Middle hill, Cornwall mines.
4062, (1818,) Chalcocite in ore. Big Hill, Cornwall.
4063, (1819,) Coarse-grained trap bowlder. In front of office, Cornwall.
4064, (1820,) Curious filamentous limestone and coating. N. W. heading of Middle Hill.
4065, (1821,) Asbestus. Near line between Middle and Grassy Hills, Cornwall mines.
4066, (1822,) Rusty, filamentous limestone with effloresence. Ditto.
4067, (1823,) Serpentine in limestone. Ravine between Middle and Grassy Hills.
4068, (1824,) Concretionary quartz from clay bank. Cut near west base of Middle Hill.
4069, (1825,) Nigger-head ore. East face of Grassy Hill.
4070, (1826,) Chlorite rock, with "slickensides." N. W. face of E. base of Middle Hill.
4071, (1827,) Coarse-grained Dolerite.
N. W. face of Middle Hill.
4072, (1828,)

4073, (1829,) Trap. Island of Rip Rap in middle of river ½ mile below Safe Harbor.

4074, (1830,) Trap. Ditto.

4075, (1831,) Trap. ± ¼ mile S. from S. W. Tavern in Millersville.

4076, (1832,) Hard crystalline gneissic rock. Conewingo Creek, ¾ mile S. from New Texas.

4077, (1833,) Vein matter intersecting the "Pictured Rocks." Friar Hotel. Middle of Susquehanna River, Md.

4078, (1834,) Anthrophyllite (?) Slate. J. Bowman's island, Susquehanna River, Md., near "Pictured Rocks," ½ mile below Safe Harbor.

4079, (1835,) Anthophyllite vein intersecting the "Pictured Rocks," with pits containing iron oxide. 2nd island in Rip Rips, from Cecil Co., Md., shore, ditto.

4080, (1836,) Anthophyllite vein intersecting Pictured Rocks. Mile's island, middle of Susquehanna River, Md., ditto.

4081, (1837,) Steatite interclated between the rocks. White rock, Little Britain Twp.

4082, (1838,) Vein matter filling cleft. Pictured Rocks, ½ mile ditto.

4083, (1839,) Anthophyllite dyke on which are pre-Indian sculptures. Mile's island.

4084, (1840,) Anthophyllite rock. Island in Susquehanna, 700 feet from shore, ditto.

4085, (1841,) Amhophyllite. Miles' island, middle of Susquehanna River, Md., ½ mile S. E. from Black Friars Hotel.

4086, (1842,) Lyenite. Ditto.

4087, (1843,) Trap—from one of large boulders. ± ½ mile E. from Goodville, East Earl Twp., Lancaster.

4088, (1844,) Trap—from one of large number of fragments strewn around. Brickerville at first cross-road N. W. from the village, Elizabeth Twp., Lancaster Co., Pa.

4089, (1845,) Trap. Kurtz's limestone quarry, 400 metres N. W. of Salisbury, Lancaster Co., Pa.
4090, (1846,) Chloritic mica slate with pyrite and chalco pyrite. Shaft on Maxwell's Farm, ¾ mile from Gap station, Lancaster Co.
4091, (1847,) Trap—from large unweathered bowlder. ⅛ of a mile N. from Pequea (mill-dam), Salisbury Twp., Lancaster Co., Pa.
4092, (1848,) Fragment of trap from dyke crossing. ¼ of a mile N. W. from Salisbury P. O.
4093, (1849,) Hornblende 130 ft. below clay. Gap mine, Lancaster Co., main shaft.
4094, (1850,) Trap-like hornblende rock, 130 ft. below clay. Gap mine, near main shaft, Lancaster Co.
4095, (1851,) Trap. Saml. McClure's, N. E. from Gap mine, Bart Twp., Lancaster Co.
4096, (1852,) Millerite. Gap mine (heading now wrought).
4097, (1853,) Mica schist. From block taken from platform wall of engine house, main shaft, Gap mine (said by Mr. Dobb to have been taken from main shaft).
4098 (1854,) Quartz, feldspar, and chlorite mica schist. 1200 metres S. W. from Gap station.
4099, (1855,) Limestone, made crystalline from proximity to trap. 1 mile west from Gap.
4100, (1856,) Unweathered fragments of trap. ½ m. W. from Spring Garden, Salisbury Twp.
4101, (1857,) Copper and nickel matter. Gap smelting works, Lancaster Co., Paradise township.
4102, (1858,) Native copper. Ditto.
4103, (1859,) Pyrite. Ditto.
4104, (1860,) Hornblende nodule, and pyrite in nickel ore. Ditto.
4105, (1861,) Hornblende. Ditto, 60 foot level,
4106, (1862,) Vivianite, siderite, chalcopyrite, nickel ore on hornblendic slate. Ditto.
4107, (1863,) Millerite. Ditto.
4108, (1864,) Millerite in hornblendic slate. Ditto.
4109, (1865,) Millerite. Ditto.

4110, (1866,) Millerite. Ditto.
4111, (1867,) Siderite. Ditto.
4112, (1868,) Quartz pseudomorphous often calcite. Ditto.
4113, (1869,) Mica schist, south wall of vein and 3 feet south of vein. Ditto, 110 foot level.
4114, (1870,) Hornblendic gneiss, S. wall and 40 feet S. of vein. Ditto, ditto.
4115, (1871,) Chalcopyrite. Ditto.
4116, (1872,) Nickel pyrite, magnetic. Ditto.
4117, (1873,) Hornblende with specks of ore in it. Ditto, 200 foot level.
4118, (1874,) Nickel pyrite non-magnetic generally from near the wall-rock. Ditto.
4119, (1875,) Pyrite hexahedra with angles and edges truncated. Boyce Farm, 1½ miles from New Texas, Lancaster Co.
4120, (1876,) Wood's mine, Little Britain Twp., Lancaster.
4121, (1877,) Hemitropos of magnetite. Pleasant Grove (presented by B. Haines), Lancaster Co.
4122, (1878,) Icosahedra and truncated hexahedra of pyrite. Boyce Farm, 1½ miles from New Texas, Lancaster Co., Pa.
4123, (1879,) Fragment of oölitic limestone from mile-stone of Mason & Dixon's line. Near State line, Peach Bottom in Serpentine quarry.
4124, (1880,) Chromite with brucite, and aragonite. Wood's mine.
4125, (1881,) Brucite, &c., on chromite. Ditto.
4126, (1882,) Zaratite on chromite. Ditto.
4127, (1883,) Deweylite. Ditto.
4128, (1884,) Zaratite. Ditto.
4129, (1885,) Deweylite. Ditto.
4130, (1886,) Brucite on chromite. Ditto.
4131, (1887,) Aragonite and zaratite. Ditto.
4132, (1888,) Limonite and göthite. Chestnut Hill (Nourse's) bank.
4133, (1889,) Göthite. Ditto.
4134, (1890,) Limonite bomb. Ditto.
4135, (1891,) Limonite bomb. Ditto.

4136, (1892,) Limonite, stalactitic and botryoidal. Ditto.
4137, (1893,) Peach Bottom slate. Brown's slate quarry, Peach Bottom, near Peters creek mouth, Lancaster county.
4138, (1894,)
4139, (1895,)
4140, (1896,)
4141, (1897,)
4142, (1898,)
4143, (1899,)

4144 to 4264—A. E. LEHMAN—1877.

4144, (1900,) Mountain creek rock. Rocky Ridge, 3½ miles N. E. from Mt. Alto.
4145, (1901,) Quartzite with *scolithus* fragments. Poke Hill, Franklin Co., opposite Shippensburg.
4146, (1902,) Fine grained schist, orthofelsite (?) Head of Raccoon Creek, south from Caledonia.
4147, (1903,) Greenish quartzose schist, fine grained. Rocky Ridge, 3 miles N. E. from Mt. Alto.
4148, (1904,) Mountain Creek rock, peculiar weathering. Stump Run, S. E. from Greenwood.
4149, (1905,) Massive quartzite. "White Rocks," 2 miles N. E. from Mt. Alto.
4150, (1906,) Quartz conglomerate. Ditto.
4151, (1907,) Limonite. Near Greenwood.
4152, (1908,) Brown quartzite. White Rock Ridge, 2 miles S. from Greenwood.
4153, (1909,) Quartzose sandstone. "White Rock Gap," 2 miles S. from Greenwood.
4154, (1910,) Float limonite ore. Ditto.
4155, (1911,) Quartzite, curved fracture. Ditto.
4156, (1912,) Copper rock. Raccoon Creek Hollow, 3 miles S. from Caledonia.
4157, (1913,) Orthofelsite porphyry with quartz and much weathered. Raccoon Creek, 3 miles S. from Caledonia.

4158, (1914,) Weathered limestone. On road to Pinch Gut, 3 miles S. from Caledonia.
4159, (1915,) Ferruginous rock. Hosack's Run, 2 miles N. from Caledonia.
4160, (1916,) Laminated quartzite. Mouth of Hollow, 3 m. N. from Caledonia.
4161, (1917,) Ferruginous sandstone. 1 mile north from Graefenburgh.
4162, (1918,) Limestone. $\frac{3}{4}$ mile S. W. from Mont Alto.
4163, (1919,) Float limonite. Ditto.
4164, (1920,) Sandy ore containing grains of quartz. Ditto.
4165, (1921,) Limonite. Douglas mine.
4166, (1922,) White quartzose sandstone. Ditto.
4167, (1923,) Argillite. Foot of mountain east from Quincy.
4168, (1924,) Quartzose sandstone. In hollow $1\frac{1}{2}$ miles east from Jonestown.
4169, (1925,) Limonite. Shaft of Douglas mine.
4170, (1926,) Quartzite with *scolithus*. Antietam Creek, $2\frac{1}{2}$ miles N. E. from White mills.
4171, (1927,) Limonite. Douglas mine.
4172, (1928,) Mountain Creek rock. Antietam Creek, 4 miles N. E. from White mills.
4173, (1929,) Quartzite. 4 miles N. E. from White mills.
4174, (1930,) Orthofelsite porphyry. $4\frac{1}{2}$ miles ditto.
4175, (1931,) Greenstone, porphyritic. 6± miles ditto.
4176, (1932,) Greenstone, schistose. 2 miles S. W. from Cold Springs on Antietam Creek.
4177, (1933,) Greenstone. Ditto.
4178, (1934,) Soft sandstone. 3 miles S. E. from Mt. Alto.
4179, (1935,) Ferruginous rock. $\frac{3}{4}$ mile S. E. from Tartown.
4180, (1936,) Quartzose schist. 2 miles S. E. from Mont Alto.
4181, (1937,) Ripple-marked limestone. Quincy.
4182, (1938,) Quartzose sandstone. Old Forge, Antietam Creek.
4183, (1939,) Argillaceous mica schist. Mont Alto Park, 2 miles± E. from Mont Alto.
4184, (1940,) Milky quartz containing weathered chlorite slate. Ditto.

4185, (1941,) Mountain Creek rock with capping of milky quartz. Buzzards Peak, 2 m. W. from Caledonia Springs.
4186, (1942,) Milky quartz. S. E. slope of Buzzards Peak.
4187, (1943,) Quartzite with curved fracture. S. E. slope of Snowy mountain.
4188, (1944,) Quartzose slate. S. E. slope of Buzzards Peak.
4189, (1945,) Orthofelsite. Antietam Creek, 5 miles N. E. from White mills.
4190, (1946,) Fine schistose rock. Buzzards Peak, 2½ miles S. W. from Caledonia Springs.
4191, (1947,) Brown, ferruginous, finely laminated sandstone containing iron ore. Foot of mountain, ½ mile S. E. from Tomstown.
4192, (1948,) Chlorite slate, milky quartz and orthofelsite(?) N. E. slope of Snowy mountain, 2 miles east from Caledonia Springs.
4193, (1949,) Orthofelsite porphyry. 1 mile west from Caledonia Springs.
4194, (1950,) Micaceous iron ore and milky quartz. Baker's Farm, ¾ mile W. from Caledonia Springs.
4195, (1951,) Porphyritic orthofelsite. ½ mile S. W. from Caledonia Springs.
4196, (1952,) Orthofelsite containing small grains of micaceous iron. Ditto.
4197, (1953,) Coarse grained Mountain Creek rock. Antietam Creek, ¾ mile N. from Old Forge.
4198, (1954,) Quartzite and milky quartz with coating of iron ore. 1 mile south from Mont Alto.
4199, (1955,) Red quartzose sandstone coated with a layer of quartz. 1½ miles south from Mont Alto.
4200, (1956,) Ore and sandstone conglomerate. 1½ miles S. E. from Tartown.
4201, (1957,) Ferruginous slate. Ditto.
4202, (1958,) Limonite. Howe's Farm, Antietam Creek.
4203, (1959,) Lean limonite. 1 mile S. W. from Old Forge, Antietam Creek.

4204, (1960,) Mountain Creek rock. 3 miles S. E. from Quincy, Franklin Co., Pa.
4205, (1961,) Fine grained quartzite. Peaceacre's Gap, 3 miles S. E. from Quincy.
4206, (1962,) Float limonite. 1 mile east from Quincy, Franklin Co., Pa.
4207, (1963,) Calcareous shale. ½ mile ditto.
4208, (1964,) Fine grained quartzite. 1 mile west from Old Forge, Antietam Creek.
4209, (1965,) Limestone. Old Rolling mill, Antietam Creek.
4210, (1966,) Limestone. 5 miles N. of E. from Waynesboro, Franklin Co.
4211, (1967,) Limestone. Ditto.
4212, (1968,) Quartzite and chlorite with quartz. 5 miles east ditto.
4213, (1969,) Impure limestone. 4 miles S. E. ditto.
4214, (1970,) Red quartz. 1 mile south from Waterloo.
4215, (1971,) Cavernous, arenaceous, finely laminated slate. ½ mile ditto.
4216, (1972,) Fine grained sandy slate. 2 miles S. E. from Hopewell Mills.
4217, (1973,) Quartzite. Ditto.
4218, (1974,) Coarse grained quartzite. 2 miles N. W. from Monterey.
4219, (1975,) Orthofelsite porphyry. 2 miles N. ditto.
4220, (1976,) Orthofelsite porphyry. 2 miles N. from Monterey, Franklin Co., Pa.
4221, (1977,) Hydro mica slate. 2½ miles N. from Monterey, Franklin Co., Pa.
4222, (1978,) "Copper rock." 4 miles N. E. from Monterey, Franklin Co., Pa.
4223, (1979,) Orthofelsite. 3 miles N. W. from Fairfield, Adams Co.
4224, (1980,) Diabase (?). 1½ miles N. W. ditto.
4225, (1981,) Chlorite slate. Ditto.
4226, (1982,) Quartz containing micaceous iron ore. 1 mile N. W. from Fairfield. Ditto.
4227, (1983,) Decomposed orthofelsite.

4228, (1984,) Fine grained quartzite containing iron. 1½ miles west from Fairfield. Ditto.
4229, (1985,) Coarse grained "copper rock." 2 miles S. of W. from Fairfield. Ditto.
4230, (1986,) Porphyritic copper rock, epidotic. Ditto.
4231, (1987,) Conglomeritic limestone. 3 miles S. W. from Fairfield. Ditto.
4232, (1988,) Sandy calcareous mesozoic shale. Ditto.
4233, (1989,) Triassic conglomeritic limestone. 2½ miles S. W. from Fairfield. Ditto.
4234, (1990,) Sandy schist. Ditto.
4235, (1991,) Fine grained epidotic rock. 3 miles ditto.
4236, (1992,) Quartz conglomerate. Ditto.
4237, (1993,) "Copper rock." 2½ miles ditto.
4238, (1994,) "Copper rock." Ditto.
4239, (1995,) Chlorite slate. 3½ miles ditto.
4240, (1996,) Chlorite rock. Mary's Hill, 2½ miles N. W. from Fairfield.
4241, (1997,) Argillite. 2½ miles west from Monterey, Franklin Co.
4242, (1998,) Hydro mica schist, chloritic. 2½ miles S. of W. from Fairfield, Adams Co.
4243, (1999,) Sandy clay. Mary's Hill, 3½ miles N. W. from Fairfield.
4244, (2000,) Chlorite schist and quartz. Ditto.
4245, (2001,) Quartzose slate. "Vineyard," 4½ miles N. E. from Waynesboro'.
4246, (2002,) Medina sandstone, loose fragments. Ditto.
4247, (2003,) Medina sandstone—loose. "Vineyard," 4½ miles N. E. from Waynesboro.
4248, (2004,) Quartzite sandstone capped with milky quartz. Ditto.
4249, (2005,) Arenaceous chlorite slate. "Vineyard" ravine, ditto.
4250, (2006,) Quartzite containing a *fine specimen of scolithus*. Antietam creek, Vineyard ravine, 5 miles N. E. from Waynesboro.
4251, (2007,) Laminated argillite. 1 mile S. W. from Cashtown.

4252, (2008,) Copper rock, milky quartz and fibrous green quartz. 4 miles, ditto.
4253, (2009,) Orthofelsite. Ditto.
4254, (2010,) Epidote (?). Poplar Spring, 4½ miles S. W. from Cashtown.
4255, (2011,) Orthofelsite. 3 miles south from Cashtown.
4256, (2012,) Porphyritic orthofelsite, bleached. Ditto.
4257, (2013,) Orthofelsite. Ditto.
4258, (2014,) Copper rock. Ditto.
4259, (2015,) Hydro mica schist. Ditto.
4260, (2016,) Argillite. Ditto.
4261, (2017,) Quartz conglomerate. 2½ miles S. W. from Fairfield.
4262, (2018,) Epidotic rock. 2½ miles S. W. from Cashtown.
4263, (2019,) "Copper rock" containing milky quartz and epidote. 3½ miles ditto.
4264, (2020,) Float iron ore. 1½ miles ditto.

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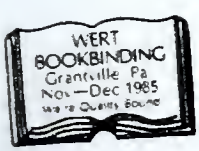
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